



Research article

Restoration and integration of the Huang Family Garden within the contemporary urban fabric of Shanghai

Aibin Yan* and Dinghan Zheng

Department of Landscape Planning and Design, East China University of Science and Technology, Shanghai, 200237, China

* **Correspondence:** Email: yanaibin@ecust.edu.cn; Tel: +862164253551.

Abstract: In the backdrop of Shanghai's century-long urbanization and modernization, traditional private gardens have undergone a profound transformation influenced by Western lifestyles, concepts, and garden characteristics. This transformation, marked by an East-meets-West fusion, deviates from the conventions of traditional gardens. In this study, we delved into the historical evolution of these private gardens into urban parks against the canvas of evolving urban life and point out that the construction of the city-park interaction mechanism hinges on how to consolidate transformation motives and empower urban space. Focusing on the case study of the Huang Family Garden owned by the Qing Gang tycoon Gold Wing and employing a spatial culture research perspective, we illuminated how the metamorphosis of a private garden into an urban park catalyzed the development of an urban area and scrutinized the spatial transformation of the Huang Family Garden amid Shanghai's urban modernization. Furthermore, our results revealed the inherent public nature of the Huang Family Garden's evolving garden space, along with the continuous manifestation and strengthening of this characteristic through successive urban renovations. The results emphasized the role of gardens in urban resilience and sustainability, highlighting the contribution of garden spaces as public domains. The features exhibited during the transformation of private gardens into urban parks create conditions for enhancing urban resilience, while providing insights into the significance of understanding garden traits in the evolution of cities.

Keywords: the Huang Family Garden; Huang Jinrong; Chinese classical garden; private garden; modern park; traditional context; urbanization

1. Introduction

1.1. Metamorphosis of private gardens in the wake of Shanghai's urban modernization

Since the inception and establishment of public concessions in mid-nineteenth-century Shanghai, the principles and techniques of Western urban construction have profoundly influenced not only the city but also the development of traditional gardens, resulting in a transformative impact. The landscape of garden construction, initially characterized by private gardens rooted in Jiangnan classical gardening techniques, has undergone a gradual evolution into a domain dominated by urban parks. These parks are characterized by Western gardening techniques or a fusion of both Chinese and Western elements, marking the initiation of the rapid modernization process of Shanghai's gardens. During this period, certain traditional private gardens opened to the public, and the activities within the gardens manifested Westernized characteristics to meet the changing societal demands. Consequently, we can perceive these gardens as indicative of the modernization transition within the realm of Chinese Traditional gardens.

Concomitant with the expansion of urban space and its structural reconfiguration, the cumulative changes stemming from the construction of modern Shanghai gardens across various epochs have culminated in the present garden entity. The amalgamation of Chinese and Western practices, coupled with the inclination towards interaction between the city and the garden, has transcended the mere aesthetics and functionality of their construction. Instead, this amalgamation has continued to evolve and undergo changes throughout the course of history.

Scholars frequently leverage gardens from this period as pivotal historical artifacts supporting the study of urbanization in modern Shanghai [1–5]. Some researchers have delved into how the spatial forms and functional activities of modern gardens, within the context of modernism, originated from the traditional garden model and progressed towards self-transformation and renewal [6,7]. Regarding the nexus between city-garden relations, scholars have summarized the theoretical framework of the transformation mechanism of city-garden interaction through comparative studies [8,9]. However, these studies have yet to extend their scope to encompass a more comprehensive array of garden cases, exploring the nuanced features within different regional versions of the city. Addressing these subjective issues aids in unraveling the public tendencies of traditional private gardens and their social evolution. This exploration, in turn, facilitates an understanding of the role and significance of a specific garden in the urban area, providing valuable insights for traditional private gardens seeking to engage in contemporary urban interactions.

Shanghai, with its distinctive historical trajectory in modern times, bears witness to the coexistence and succession of diverse regimes and cultures, leaving discernible imprints within the gardens. The Huang Family Garden, a quintessential outcome of the Republic of China's gardening surge in the 1930s, embodies various phenomena in the construction, renovation, and augmentation of gardens. These phenomena unveil the principles governing the maintenance of vitality, renewal, and sustainable development during the transformation from traditional private gardens to urban parks. We stipulate the social environment as its backdrop, focus on modern city-garden interaction as its subject, adopt spatial culture research as its perspective, and select the Huang Family Garden in Shanghai as a representative case study. Our objective is to elucidate the impact of social changes on garden construction in modern Shanghai amid the confluence of Chinese and Western cultures. Additionally, we aim to unravel the interactive relationship between private gardens and urban transformations in Shanghai.

1.2. The construction background and evolution of the Huang Family Garden

Huang Jinrong (1868–1953), originally hailing from Yuyao, Zhejiang province but born in Suzhou, held the position of Chief Inspector at the General Patrol House in the French Concession for over two decades. During his tenure, he was involved in various illicit activities, including opium smuggling, operation of casinos and theaters, and real estate investment. Additionally, Huang was the founder of the “Rong Society”, a prominent Qing Gang organization situated in Shanghai’s Bund.

The Huang Family Garden, located west of Caohejing Town and north of Caohejing River in Shanghai, underwent a gradual expansion from the ancestral cemetery of Huang family. Previously known as the Zhang Family’s Cemetery or the Zhang Family’s Garden, with the adjacent road named Fenshan Road (now Wenshan Road) [10], it originated as the burial site of Huang Jinrong’s parents on the eastern side of Zhang Family’s Cemetery. In the 1920s, attaining success, Huang constructed the Huang Family Ancestral Hall adjacent to the cemetery, symbolizing his social status and wealth through the traditional practice of ancestor veneration.

Upon retirement from the General Patrol House, Huang frequented the ancestral hall, particularly seeking respite during stifling summer months. Caohejing, with its cool shade and rice fields, served as an ideal retreat from the heat. Recognizing Huang’s intentions, his disciples proposed expanding the ancestral hall into a garden, an idea that received Huang’s approval. Disciples Tang Jiapeng and Feng Zhiming spearheaded the project, raising funds among themselves, with contributions ranging from thirty to over a thousand yuan based on financial capacity. Notable contributions came from Du Yuesheng and Jin Tingsun, each donating 4,000 yuan, alongside substantial sums from Shanghai’s business community. In total, 3.6 million yuan was raised, covering construction expenses, furniture acquisition, with a surplus remaining [11].

Construction commenced in 1931, facilitated by the creation of Jinrong Road (now Kangjian Road), an 11-mile road connecting Caohejing Town to Zhang Family’s Cemetery. By 1934, the garden was completed, spanning an area of 1.76 ha. Initially named Huang Family Villa, it was later officially designated the Huang Family Garden. Adorned with pavilions, towers, corridors, rockeries, and an array of flowers and trees, the garden emerged as a notable classical garden during the Republic of China era (1912–1949).

On November 18 of that year, a grand completion ceremony took place at the Huang Family Garden, drawing over five thousand attendees who came to extend their congratulations and tour the garden. Dignitaries present included the Mayor of Shanghai, Wu Tiecheng, the Mayor of Beiping, Zhou Dawen, the Commander of the Songhu Garrison Command, Dai Ji, the Director of the Security Bureau, Yang Hu, the Director of the Municipal Public Security Bureau, Wen Hongen, as well as esteemed social elites such as Wang Bailin, Zhang Zhijiang, Liu Hongsheng, and Du Yuesheng. In 1935, Chiang Kai-shek personally inscribed the four characters “culture, conduct, loyalty, and trust” for the garden phrase held in high regard by Huang Jinrong, akin to a precious treasure. This inscribed plaque by Chiang Kai-shek found its place in the first pavilion on the west side of the corridor in the main hall of the garden.

Following the garden’s completion, a tradition emerged: Every Sunday, Huang’s disciples and relatives gathered there informally. They shared meals and participated in recreational activities, dispersing around three or four o’clock in the afternoon. With the onset of summer, Huang himself would relocate to the garden for respite, remaining there until the cooler days of August, at which point he would return to his primary residence in Junpei Lane [11]. Numerous significant events from Huang

Jinrong's later years unfolded in this garden, including activities of the Rong Society (Figure 1), celebrations for Chiang Kai-shek's fiftieth birthday, and gatherings that hosted city officials and prominent societal figures. Particularly noteworthy are instances when Chiang Kai-shek visited the Huang Family Garden to convey birthday wishes on Huang's seventieth and eightieth birthdays, demonstrating his respect through the traditional gesture of kneeling, as documented in reference [10].



Figure 1. The Rong Society activities in the Huang Family Garden [13].

Following Japan's occupation of Shanghai in 1937, the Huang Family Garden fell under Japanese control, leading to the looting of its collections and the subsequent destruction by fire of the Hall of Guandi (God of the War) and Jingguan Villa (popularly known as the "Mandarin Duck Buildings", comprising east and west wings), along with the eastern section and inner residences. This destructive event significantly altered the appearance of the garden. After World War II, control of the Huang Family Garden was restored to Huang Jinrong, prompting a period of renovations. However, these restoration efforts excluded the eastern portions of the Guandi Temple and Jingguan Villa, and to date, they remain unrestored.

In 1953, subsequent to Huang Jinrong's demise, the Huang Family Garden underwent nationalization, becoming a military facility and an affiliated property of Shanghai High School [12]. By 1957, the Shanghai Garden Administration assumed control and initiated a comprehensive restoration, repurposing the original Huang family's cemetery into a small park. In August 1958, the site reopened to the public, while its name was changed to the Guilin Park owing to the profusion of osmanthus trees. Thereafter, it was greatly damaged during the Cultural Revolution. In 1978, a reception hall was erected at the former site of Jingguan Villa, and in 1980, approximately 0.56 ha of the initial Zhang family's cemetery were incorporated, giving rise to the South Garden. Subsequently, in 1986, an additional 1.37 ha to the east were amalgamated, forming the East Garden, thereby configuring the park's present layout spanning 4.2 ha (Figure 2). In 2004, the former site of the Huang Family Garden received designation as a district-level cultural relics protection unit, and in 2014, it attained the same designation at the municipal-level in Shanghai.

The original the Huang Family Garden, situated in the central and northern sectors of the

contemporary the Guilin Park, encompasses several buildings. The primary hall named the Sijiao Hall, the southern Eight Immortals Terrace (housing Eight Immortals statues, albeit damaged in 1962 and subsequently restored), the Ha-Ha Pavilion, the twin bridges, and the Deer Pavilion on the eastern periphery, the Boruo Boat in the northeast, the corridor in the west, the Crane Pavilion in the southwest, the Yi Pavilion in the northwest, and the western wing of the northern Mandarin Duck Tower (repurposed into a reception hall in 1978), despite undergoing restoration initiatives, largely retained their original appearance, as corroborated by historical photographs. The road network has similarly experienced minimal alterations. However, notable features such as the Guandi Temple, the century-old peony garden, and the golf practice grounds have regrettably been lost and no longer exist.

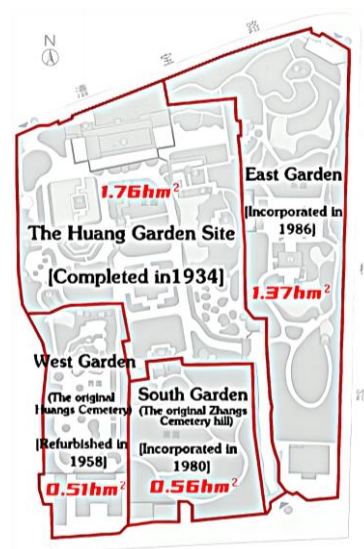


Figure 2. The evolution of the Huang Family Garden boundaries.

Through a comprehensive integration and analysis of pertinent materials, encompassing current park conditions, historical photographs, oral history accounts, and relevant literature, we can preliminarily delineate the initial expanse of the Huang Family Garden. This area, spanning 1.75 ha, is situated to the south of the Caohejing River. With a nearly square layout, excluding the entrance region, the dimensions approximate 120 meters east-west and 140 meters north-south.

1.3. Visual documentation of the garden in Republic of China Era (1912–1949): The photographic album “Views of the Huang Family Garden”

Following the completion of its construction, the Huang Family Garden underwent multiple instances of damage, leading to significant alterations in various features. However, fortuitously, Huang Jinrong took proactive measures by commissioning a comprehensive photographic record subsequent to the garden’s completion. This record, known as the ‘Views of the Huang Family Garden’ was produced in January 1935 [14]. Disseminated among friends and family, this publication holds the status of a precious historical document that persists to the present day. It serves as a repository of crucial insights into the original layout and appearance of the Huang Family Garden during its inaugural construction phase.

Cai Yuanpei bestowed the title upon the book, which not only features an introduction by the esteemed novelist and journalist Sun Yusheng but also includes a preface authored by Huang. The volume comprises 60 rare historical photographs dating back to the establishment of the garden (Figures 3 and 4). These visual documents represent an invaluable collection of historical evidence, providing a unique resource for the scholarly examination of traditional garden construction practices during the early 20th century.



Figure 3. Historical photographs of the Huang Family Garden [14].



Figure 4. North facade of the Huang Family Garden [14].

The examination of historical images is complemented by the use of archival materials, including annals, local chronicles, publications, and news reports related to the Huang Family Garden. We further enriched the study through a comparative analysis with historical maps, photographs, and published literature pertaining to the Caohejing area. Through textual and visual evidence, we clearly observe the preservation of Chinese Traditional Garden's aesthetics within the garden.

Furthermore, discernible influences from the Western garden and architecture are evident, including expansive lawns, golf courses, and Western architectural embellishments. The spatial configuration of the garden, characterized by its opening and closing dynamics, demonstrates conspicuous public attributes. This configuration renders the garden a venue conducive to discourse, leisure, and various communal activities among the Rong Society disciples. Interviews and data collection from relevant individuals, including descendants of the Huang Family Garden caretakers and local residents, further validate this perspective. This pivotal role in fostering public engagement established a sustainable groundwork for the subsequent and triumphant metamorphosis of the Huang Family Garden into a publicly accessible park space.

2. Anchoring in a territorial context: Modernity in the spatial management of the Huang Family Garden

2.1. *Integration of public characteristics in garden construction*

During its construction, the Huang Family Garden maintained the structural characteristics of traditional Chinese gardens (Figure 5). The main hall, Sijiao Hall (details provided in Table 1), is centrally positioned, slightly southward—a common layout in large and medium-sized Chinese traditional gardens since the late Ming Dynasty. Diverging from Chinese traditional gardens that primarily feature mountain or water views, its main feature is not mountain or water but expansive, level lawns bordered by hedges—a fusion of Chinese and Western elements. To the east, rockeries, water features, a dry boat named the Prajna Dry Boat, and the Avalokitesvara Pavilion are present, with water confined to a small corner. Westward, a long corridor separates the space, and a mid-lake pavilion named Yi Pavilion, and Hall of Guandi are located northwest of the corridor. Apart from the artificial hills of the Avalokitesvara Pavilion and the Deer Pavilion which are constructed with soil, other artificial hills consist mostly of stacked rocks. The garden features extensive flat grasslands, with two Taihu Lake stone peaks, locally known as “Grandpa Stone” and “Granny Stone”, relocated from Suzhou’s Yan family Garden [10], enhancing its appeal. South of the main hall lies a level lawn, with the Eight Immortals Terrace standing across, serving as an open-air theater. North of the main hall area is the tranquil residence called Jingguan Villa.

The landscaping elements of the Huang Family Garden primarily include artificial hills, waterscape, architecture, and vegetation. While adhering to Chinese traditional garden norms in artificial hills and waterscapes, there are evident Western influences in the architectural and botanical elements. For instance, the large lawns on the north and south sides of the main hall have become the focal point. The layout of the garden seems to reveal a strong inclination towards yearning for the new trends and lifestyles symbolized by Western-style garden lawns at that time, even in a construction activity like the Huang Family Garden that proudly embraces traditional garden art. Moreover, various buildings showcase Western elements and industrial technology, such as colored glass windows, a cast-iron roof on the Deer Pavilion, and three Western copper lamps suspended from the beams of the main hall.

Adapting to a “modern” lifestyle, the spatial scale of the Huang Family Garden has been adjusted to suit the times. The roadways within the garden are notably wider than those in Chinese Traditional Gardens, and the road lines often have straight lines and geometric curves, which is very different from the Chinese Traditional Gardens that value curves for beauty and advocate natural lines. The residence Jingguan Villa consists of two symmetric and regular reinforced concrete buildings, two-story, totaling 12 rooms, deviating significantly from the typical fragmented and intricately arranged spatial features found in Chinese Traditional Gardens. The unique Yi Pavilion, though named as a pavilion, is actually a Western-style building with a relatively high space utilization rate. The former golf putting practice area in front of the Tianxiang Pavilion is another example of the adaptation to modern activities. The outdoor theater on the south side of the main hall, unlike Chinese Traditional Gardens, adds a touch of Western charm with open-air opera performances. In comparison to Chinese Traditional Gardens, the overall spatial and scenic scales of Huang Family Garden are enlarged. Apart from the mentioned changes in road and guiding space scales, the primary scenery, characterized by extensive level lawns, deviates from the traditional practice of climbing heights to enjoy panoramic views in classical gardens. This design creates a “spacious” landscape; the lawn scale is accordingly enlarged to match the status

of the main scenery.









In contrast to the predominant themes of seclusion in Chinese Traditional Gardens, the Huang Family Garden reflects the prominence of secular culture. Although the theme of the garden is expressed as “culture, virtue, loyalty, and trustworthiness”, which comes from the Analects of Confucius, the core expression lies in the theme of loyalty and trustworthiness. This aligns perfectly with Huang Jinrong’s background and the cultural aspirations of the “Rong Society”. While the garden features areas that boast religious culture, such as the Avalokitesvara Pavilion, the Hall of Guandi, and the Prajna Dry Boat, it seamlessly integrates the religious themes with the cultural appeals of loyalty, trustworthiness, blessings, and disaster relief associated with their society, as well as the entertainment demands of secular activities throughout the entire garden.

In terms of the division, guidance, and transition of garden scenes, the emphasis leans towards a grand and expansive style similar to public spaces. For instance, the entrance guidance area lacks spatial variation, presenting a single scene. Large lawns dominate the north and south sides of the main hall, offering an unobstructed view but lacking the charm of view-blocking and complementing each other. The garden’s wide roads, often straight, influence the spatial and scenic hierarchy. Features characteristic of classical garden spatial aesthetics, such as shifting perspectives and creating a sense of vastness through small spaces, are weakened. Thus, while the overall appearance of the garden echoes that of Chinese Traditional Gardens, its specific spatial presentation responds to the collective and public demands of society and follows the trends of Western modernity.



Figure 5. The overall site plan of the Huang Family Garden.

Table 1. Brief description of key buildings in the Huang Family Garden.

1930s Historical Architectural Images	Key Landmarks and Buildings	Building Area	Architectural Overview
	The Sijiao Hall	250 m ²	Located at the center of the garden, this square hall faces south, features five bays, and is constructed with brick and wood. It has two hipped-roof pavilions at south and north entrances. The architectural structure is adorned with carvings depicting historical stories of “culture, conduct, loyalty, and trust”.
	The Avalokitesvara Pavilion	102 m ²	Located on the east side of the water. It's a notable pavilion constructed on the top of a rocky hill, originally dedicated to Avalokitesvara.
	The Prajna Dry Boat	40 m ²	Located on the north side of the Avalokitesvara Pavilion. The dry boat has a two-story design with a double-eaved, hipped roof. The bow faces west, and there's a lotus pond on the west and south sides, which contain Buddhist symbolism.
	The covered passage	Over 60 meters in length	The covered passage, or “Nine-Bend Corridor”, is a wooden structure in the northwest of the Sijiao Hall, featuring three small pavilions: two hexagonal ones at both ends and an octagonal one in the middle, known as the “Multi-Angle Dragon Head Pavilion.”
	The Yi Pavilion	60m ²	The Yi Pavilion located northwest of the covered passage, is a two-story structure with a concrete frame, fire-resistant brick walls, and surrounded with a rectangular pool.
	The Residence (called Jingguan Villa)	About 430m ²	The original Huang Family Garden residence was destroyed during the World War II. In 1978, a welcoming hall was rebuilt on the same site.
	The Tianxiang Pavilion, the rocks	13m ²	Inside the Second Gate, an east-west garden path leads to the Tianxiang Pavilion, a wooden structure with a glazed tile roof. Nearby are two notable stone peaks made of the Taihu Lake stones, known as the “Grandpa Stone” and “Granny Stone”.
	The Deer Pavilion	15m ²	North of the rocky peak is a dragon-carved stone terrace. Northeast of the terrace is the Deer Pavilion, featuring a ceramic deer on the top. Adjacent to the pavilion's northeast corner is an artificial hill.

2.2. Reintegration with urban regional demands and the momentum towards urban park transformation

In the 1920s and 1930s, following the establishment of the Republic of China's Shanghai Special City in 1927, Caohejing, positioned near the urban center, experienced a period of growth. The construction of Humin Road and Caobao Road facilitated better connectivity between the town and the city, turning the surrounding vacant land into a coveted suburban district. In the early 1930s, entrepreneur Xian Guansheng purchased 4 hectares of land in the south of the town, establishing "Guansheng Garden Farm" and constructing Guansheng Garden Road, the town's first granite-paved road. In 1931, Huang Jinrong initiated the construction of the Huang Family Garden in the west, creating Jinrong Road. Moreover, in the northeast on Caoxi Road, cotton merchant Cao Qiming's ancestral garden, the Cao Family Garden, was completed in 1935, featuring landscaped areas and a burial ground, and later transformed into the Caoxi Park, faced the future Longhua Funeral Parlor.

In the wake of the growing reputation of gardens in the Caohejing area, intentional and unintentional efforts have been made to establish garden tour routes. The Huang Family Garden is increasingly perceived by visitors as a resting place on their way to explore Caohejing and Longhua during the modern urbanization process in Shanghai. Since its opening in 1935, the Huang Family Garden has been featured in advertisements in newspapers such as *Shen Bao* [15], showcasing events like the exhibition of hundred-year-old peonies [16], hosting sports competitions [17], and collaborating with nearby restaurants [16]. These reports highlight the openness of the Huang Family Garden to the public since its establishment.

From its inception in 1931, the Huang Family Garden established the Caohejing Fire Brigade [18]. Between 1935 and 1937, the garden hosted various group tour activities, including events like the National Language Class Amusement Party [19] and the Ren Cheng School Sports Meeting [17]. Together with the nearby Cao Family Garden and Guanshengyuan Farm, Huang Family Garden became one of the three major scenic spots in Caohejing. Whether organized by official groups or private individuals, visitors exploring the southwestern outskirts would invariably come to sightsee at these locations. In 1934, the Shanghai Children's Welfare Association and Guanshengyuan Food Company jointly organized a children's park tour event. It attracted representatives from 124 schools and over 800 attendees. The event was personally guided by the then Director of the Shanghai Education Bureau, Mr. and Mrs. Pan Gongzhan [20]. Participants visited various places, including the Huang Family Garden, the Cao Family Garden, and the Ten-Thousand-Years Cemetery. Subsequently, besides private small groups, travel agencies such as the Economic Society set up tour routes, leading to a gradual increase in the number of tourists.

The Huang Family Garden, the Ten-Thousand-Years Cemetery, the Cao Family Garden, the Guansheng Garden Farm, the Kangjian Park, and Longhua Temple are intricately organized into a well-sequenced short-distance tourist route. Furthermore, travel agencies and economic societies established tour routes within the Caohejing area, giving rise to a popular sightseeing itinerary from Longhua to Caohejing [21]. This underscores the profound connection between the Huang Family Garden and the Caohejing area during that period. Beyond the unconscious publicization of the Huang Family Garden, it has evolved into a shared understanding as an openly accessible public space. Rooted in the concept of garden space, the expansion and construction of structures such as the Jinrong Pavilion, Jinrong Bridge, and Jinrong Road (now Kangjian Road) stand as significant representatives in the enduring transformation of urban space in Shanghai. Jinrong Road, situated in the western

segment of Caohejing's main street, witnessed pivotal expansion by Huang Jinrong, playing a decisive role in shaping and enlarging the central area of Caohejing. The construction and expansion of gardens contribute to shaping and anchoring the regional context, providing compelling evidence for the modernization and publicization of traditional garden spaces in Shanghai.

3. Production of public space: Transformation towards the modern urban parks

3.1. Transform in demand-orientation: The gradual transition from private gardens to public parks

After undergoing various phases of construction, destruction, and modifications over different periods, the Huang Family Garden has undergone limited restoration and been preserved as heritage in the contemporary era. While its developmental process appears similar to the iterative approach of most garden spaces in the Jiangnan region, which involves a fundamental transition from private gardens serving their own purposes to urban landscapes with functional relevance, the Huang Family Garden possesses distinct characteristics. Since its inception, it has maintained a high degree of interaction with urban space, to some extent influencing the garden development trend in the Caohejing area. In its later sustained development, its unique spatial attributes have transcended time and continue to the present day, enabling the Huang Family Garden to complete its transformation from a traditional garden to a historical heritage through interaction with the city of Shanghai.

In general, the transformation of traditional gardens in the evolution of Shanghai's urban space presents a paradox: While garden spaces, as the most traditional spaces within the city, are strictly protected according to heritage conservation standards, they are also among the most publicly accessible spaces in the city. This high level of openness determines the highly public nature of these gardens, with internal spaces and facilities imposing greater demands on population capacity. However, the spatial form of these traditional gardens often deviates from the open posture of modern urban areas, as they originally served the needs of some individuals.

Huang's Garden, as a projection of the social development of the 20th centuries in the physical urban space of Shanghai, was influenced by various political, social, and cultural factors from its inception. The garden's owner was not the sole shaper and user of the space. As a result of the interaction between society and space, such open private gardens can be seen as urban expansion strategies driven by individuals that contribute to the development of surrounding towns, or as material representations of cultural exchange between East and West in the urban transformation context. The inherent public nature also facilitated the smooth transition to a park starting in the 1950s, from the system of opening private gardens for tours to municipal construction, and from the construction of public spaces to the popularization of civic consciousness. The historical dimension borne by the Huang Family Garden is distinct from that of modern concession parks in Shanghai. The name of "Huang's Garden" not only encompasses the garden itself but also influences the initial form of major transportation routes in Caohejing Town and the types of emerging industries in the vicinity. The interaction between the two continually evolves with the city's changing definition of the public nature of traditional gardens.

3.2. The evolving mission in contemporary times: Opening, restructuring, and restoration of parks in socialist urban contexts

The transformation of the Huang Family Garden into a modern urban park can be traced back to the 1950s when the Shanghai Municipal People's Committee invited a planning team from the Ministry of Building Construction to draft the *Preliminary Opinions on the Overall Urban Planning of Shanghai*. This overall planning introduced a large-scale urban improvement plan. Reflecting on various visions for Shanghai's urban layout in the early days of the People's Republic of China, in 1959, the city adopted a policy for urban construction and development that emphasized "gradual transformation of the old city area, strict control over the scale of development in the suburbs, and planned construction of satellite cities". Subsequently, the *Conceptual Sketch of Shanghai Regional Planning* and the *Shanghai Urban Master Planning Sketch* were developed (Figure 6).

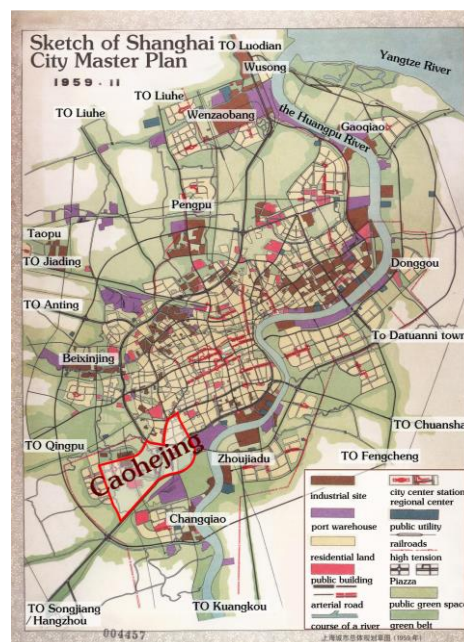


Figure 6. Sketch of Shanghai urban master plan [22].

From 1953, when ownership of the Huang Family Garden was transferred to public ownership, to its reopening as a city park in 1958, the nature of this space remained in a state of ambiguity, serving as idle land for both the military and Shanghai Middle School [12]. The 1950s marked a significant period of urban planning adjustments in Shanghai, paralleling national political planning shifts that triggered a wave of park construction. In 1949, the urban area had only 14 parks covering an area of 66.5 hectares. Since 1951, various landscape land has been used to transform into urban parks such as the People's Park, the Longhua Park, the Xijiao Park, the Jing'an Park, the Changfeng Park, etc. By 1958, the number of urban parks had increased to 50.

In 1958, as responding to Chairman Mao Zedong's call to "Great Leap Forward" campaign, "national landscaping and gardening movement" and "turn the country green", the municipal government decided to construct new parks and expand existing ones in residential areas of the laboring people. The Yulan Park was built at the three districts junction of Yulin, Tilanqiao, and Beijiao,

and the second-phase project of the Changfeng Park was undertaken in Putuo District.

In February of this year, a massive tree-planting movement swept the city, with the tree-planting target surging from 15.5 million saplings to 120 million saplings. By 1962, a total investment of 14.55 million yuan was made over five years to expand 11 parks (with an area of 1.6 million square meters) and develop 37.6 hectares of street green spaces. Against this backdrop, the Huang Family Garden, already under public ownership, underwent a systematic transformation. It preserved garden spaces inclined towards public use, leveled parts of the original cemetery, emphasized park features, and planted osmanthus throughout the garden. In 1958, in line with the trend of correct utilization of existing urban greening land, the Huang Family Garden, as an existing garden with a solid foundation, was included in the list of parks to be transformed. It made full use of the existing garden resources, added a large number of osmanthus trees to establish a thematic garden feature, leveled the original cemetery sections, and achieved a high level of unity between urban and garden spaces, boundary reshaping, and functional renewal.

3.3. Exploring the new paradigm: Attempting on the transformation mode of city parks

Under this background, represented by the Huang Family Garden, a series of traditional private gardens in Caohejing area experienced a revival and were integrated into more significant urban development agendas, facilitating the transition from private gardens to the vision of urban parks. The development of the landscape system in Caohejing area encompassed not only the architecture in the gardens such as the Huang Family Garden, the Cao Family Garden, and Guansheng Garden, but also involved the systematic renewal of public infrastructure within the gardens. This establishment of a new “paradigm” was centered on spatial retention and functional renewal, achieved through redefining land boundaries and identifying areas for revitalization, enabling interaction between the city and the gardens.

The spatial transformation of the Huang Family Garden was not only rooted in the continuous evolution of its physical space, but also resulted from the increasingly public and gradual transformation of the garden space in the process of interacting and blending with the surrounding space of the city, which largely eliminates the opposition between private gardens and urban public spaces; therefore, it provides a basic condition for the subsequent basic maintenance of the original appearance and inclusion in the spatial renewal of Shanghai urban parks. The evolution process of the Huang Family Garden to the Guilin Park, private garden to public space, was continuously interacting with the space production of Caohejing regional history and urban culture. As a traditional historical garden space, it is preserved within urban spaces, but the historical buildings, stones, flowers, trees in the garden space continued to change in different historical periods, the boundaries of the garden were adjusted multiple times with the development of the city, and its own attributes have also undergone multiple changes of “private garden–urban park–cultural heritage site”.

4. Urban space empowerment: Expansion of space

4.1. New demands and transformations in the epoch of urban expansion

After the reform and open policy, Shanghai’s efforts in landscape construction and greenery development focused on creating tourism and sightseeing destinations. They connected cultural and

natural landscapes along a continuous route, gradually forming the Longcao Scenic Tourist Line. Substantial quantities of trees, plants, and flowers were planted in the scenic areas and along the route, enhancing the level of greenery while promoting the development of the tourism industry. This marked a new phase of urban renewal plans and spatial empowerment, with urban parks serving as a key catalyst for Shanghai's urban development.

During the 8th Five-Year Plan" period, the municipal government intensified the efforts of urban landscape construction, further developing a comprehensive urban greening system consisting of points, lines, surfaces, wedges, and rings. In 1984, the Municipal Planning Institute commenced the preparation of the "Caohejing District Master Plan" and the "Caohejing District Master Plan Map," using this as a pilot for district-level planning. According to the requirements of the overall plan, areas to the east of Hongmei Road, including the Guilin Park, the Kangjian Par, the Caoxi Park, and the Longhua Martyrs Cemetery, were integral components of the Longcao Scenic Tourist Line. The plan with a particular focus on enhancing the construction of strip-shaped greenery, forming a more comprehensive urban greening system.

Since the onset of reform and opening up, Caohejing has swiftly adapted to the increasing demand for suburban urbanization. In 1984, it transitioned from a Shanghai County jurisdiction to Xuhui District and later evolved into Caohejing Subdistrict by 2001. This marked its transformation from rural town jurisdiction to an integral part of Shanghai's urban area, actively participating in urbanization.

This transformation, closely linked to responding to urban expansion, reshaped the region's overall functions, providing robust support for its expansion. The urbanization of Caohejing not only adeptly adjusted to Shanghai's expanding urban scale but also demonstrated a precise response to growing spatial demands. The establishment of the Caohejing Emerging Technology Development Zone in 1984 facilitated the transfer of industrial industries of downtown area to the periphery, fostering a hub for high-tech industries in the western part of the town. Furthermore, the Tianlin and Caoxi plots to the north and east were planned for new residential communities, absorbing the outward migration of the urban population during large-scale urban relocation projects in the 1980s and 1990s. The strategic location of Caohejing has positioned it as a key player in Shanghai's urban development, responding actively to the evolving dynamics of urbanization (Figure 7).



Figure 7. Surrounding context of Caohejing Town in 1980s [23].

The opening of Metro Line 1 in 1995 and the completion of Shanghai South Railway Station in 1996 marked a significant upgrade in the transportation system. This development facilitated new connections along Humin Road and Longwu Road, leading to an accelerated shift of industrial and corporate sectors from downtown towards the southwest of Shanghai, particularly to Wujing area. This transition not only initiated the deindustrialization process in core regions of Xuhui District, including the original Caohejing town, but also marked the conclusive end of the agrarian era in the peripheral areas of Caohejing town. The Caohejing Old Street underwent a comprehensive redevelopment in 2006, evolving into a contemporary residential area. This process not only addressed historical remnants appropriately but also demonstrated innovative use of urban space.

4.2. the Huang Family Garden in the tide of urban expansion

The shifting functions within the Caohejing area prompted a reevaluation of the Huang Family Garden's developmental positioning. During the 1950s to 1980s, the garden, situated on the western section of Caohejing Old Street, was envisaged as the central park and green space radiating throughout the entire Caohejing town. However, with the relocation of the town center in Caohejing, the original old street underwent redevelopment, transforming into a residential area and altering the target users for the Huang Family Garden. Consequently, its role gradually evolved into a leisure and wellness green space serving the surrounding residents.

To accommodate this shift, the garden expanded, absorbing land from the south and east, forming a well-structured rectangular plot. Together with the Kangjian Park on the opposite bank of the river, it became the primary public green space for recreational activities in the surrounding residential areas. The newly expanded East Garden and South Garden adopted a more open layout, emphasizing natural vegetation and pathways, aligning with the spatial characteristics of urban regional parks. The introduction of the Sijiao Hall Tea House and Mandarin Duck Tower Restaurant aimed to generate additional revenue within the park.

In this era, the planning activities within the Huang Family Garden experienced a functional shift to meet the leisure and wellness needs of residents in the surrounding densely populated residential areas. As a vital component of the cultural center in the Caohejing area, Caohejing Subdistrict utilized public spaces such as the Guilin Park, the Kangjian Park, and the Caoxi Park to establish guidance stations for activities like Wushu exercises [23]. Led by various neighborhood committees, these stations hosted daily morning sessions, gradually attracting more elderly participants. For instance, in 1995, the Guilin Park alone witnessed over 400 individuals engaging in daily exercise routines. As neighborhood committee activity planning evolved, post-2000, fitness stations and trails were introduced in the Sijiao Hall and corridor area within the Huang Family Garden. This marked the establishment of neighborhood-level sports and cultural teams. They engaged in health exercises and Tai Chi, contributing to the community's sports and cultural development and fostering the promotion of health and wellness activities.

During this period, the Huang Family Garden leveraged its abundant vegetation to accentuate the osmanthus element, magnifying it into a distinctive garden feature. The addition of services like restaurants, tea houses, and merchandise outlets, strategically placed during the peak of spring outings and osmanthus blooming, offered traditional osmanthus tea. Starting in 1991 and approved by the Shanghai Municipal People's Government, an annual "Shanghai Osmanthus Festival" was established during the osmanthus blooming season [23], creating an integrated park activity encompassing moon

appreciation, osmanthus admiration, shopping, and entertainment. This showcased another transformation in the functional nature of the Huang Family Garden in the context of urbanization of the Caohejing area.

Post-1980s, the Huang Family Garden continued to bear the mantle of public issues in urban regional development. This demand expression amid societal transformations and the interactive mode of coordination among various stakeholders, fueled by heightened public awareness, saw an enhancement in openness through specific spatial renovations and systemic upgrades. This is not merely a result of park and landscape design or planning controls; it more profoundly reflects the urbanization development pattern of the Caohejing area. In Caohejing region, aligning with urban needs and ongoing integration, macro-level interactions with urban development occurred through urban transportation planning, historical facade preservation, and public landscape renewals. This has propelled urban parks in this area to break boundaries, forming a modern park ecosystem that is diverse, integrated, and interactive.

Certainly, we should regard scenery as something in need of implementation or “evolution”, rather than a fixed image [24]. In its ongoing transformation into an urban park, the Huang Family Garden has increasingly assumed the role of a model for the evolution of modern gardens and has taken on more functions in shaping spatial culture and interacting with urban culture. This is reflected not only in its prominent position as a cultural highlight of the past Caohejing urban space, but also in the instant integration of modern gardens and urban life.

5. Conclusion

Through the analysis of the Huang Family Garden, a typical case of urban spatial evolution in Shanghai with “public gardens” as a transformative catalyst, this study has examined the mechanisms and paradigms of “publicness” in urban renewal transformations, and explored the changes in functional space usage of the Huang Family Garden across different periods.

From the early 20th century to the eve of World War II, traditional Chinese garden construction exhibited signs of decline and gradually incorporated Western landscaping concepts, techniques, and technologies, adapting continuously. The Huang Family Garden reflects the immense adaptive potential of Chinese modern gardens transitioning towards modernity. A comprehensive examination of the urban-park interaction mechanisms in the context of the Huang Family Garden’s transformation in modern and contemporary urban spaces reveals that existing urban gardens can potentially transform into public spaces under certain conditions. The development of urban public gardens serves as a crucial anchor point and historical source for urban renewal. Additionally, urban-park interaction signifies the interaction between landscape, history, culture, and urban spaces, as well as the interaction between the city and its inhabitants. Inclusive development and gradual evolution constitute the dynamic renewal process of urban-park interaction.

The analysis of the transformation process from the Huang Family Garden to the Guilin Park reveals the multiple dimensions and evolutionary possibilities of modern gardens in urban spatial development. As once an anchor point of urban traditional landscapes, the garden domain and urban historical spaces and traditional appearances interact organically, mutually influencing and continuously defining the city’s tradition based on the landscape itself. In turn, it anchors the city’s cultural landscape, forming a unique regional image. This provides a perspective for historical tracing and dynamic evolution analysis of urban development.

We focus on a specific case, the Huang Family Garden, to examine the urban evolution process based on private garden transformation in Shanghai's urban space. The analysis reveals the interplay between urban renewal and garden transformation, termed "Urban-Garden Interaction". In the current phase of Shanghai's urban development, the diversity, scale, and hierarchy of urban public gardens provide essential local resources and spatial development models for addressing the manifold opportunities and challenges faced by the city. Over nearly a century of continuous renewal, public park spaces are dynamically engaging with various facets of urban space, transforming into multifaceted domains with unique spatial features, rich historical heritage value, and inclusive public cultural attributes. The empirical perspective of this research validates the significant role of urban public gardens in enhancing urban resilience and sustainability, offering robust case support for relevant theories. It is essential to note that while this paper primarily focuses on the urban evolution process based on the Huang Family Garden case, generalizing this correlated mechanism to other cities or gardens requires additional case studies and comprehensive considerations.

Use of AI tools declaration

The authors declare that they have not used Artificial Intelligence (AI) tools in the creation of this article.

Acknowledgments

The research was funded by Shanghai Pujiang Program, grant number 2020PJC021.

Conflict of interest

The authors declare no conflicts of interest.

References

1. Jie T (2013) Constructing urban green core from culture context: Chinese traditional garden as green core. *Acta Horti* 2013: 127–131. <https://doi.org/10.17660/ActaHortic.2013.999.17>
2. Zhang T, Lian Z (2021) Research on the distribution and scale evolution of Suzhou gardens under the urbanization process from the Tang to the Qing dynasty. *Land* 10: 281. <https://doi.org/10.3390/land10030281>
3. Chu Z, Zeng T, Hu L, et al. (2021) Study on the transformation strategy of Chinese classical gardens in urban public space: Take Anning Nanyuan as an Example. *IOP Conf Ser: Earth Environ Sci* 768: 012070. <https://doi.org/10.1088/1755-1315/768/1/012070>
4. Feng Y, Wei YX (2019) A rustic opinion on the current state of spatial sequence and landscape composition of classical gardens in modern cities—Taking Beining Park in Tianjin as a case. *Front Art Res* 1: 7–15. <https://dx.doi.org/10.25236/FAR.20190202>
5. Mo F, Selman P, Woudstra J (2021) The origins of the modern park system of the International Settlement in Shanghai (1899–1929). *Landsc Res* 46: 435–449. <https://doi.org/10.1080/01426397.2020.1867975>

6. Zhao J, Li R, Wei X (2017) Assessing the aesthetic value of traditional gardens and urban parks in China. *Proc Inst Civ Eng Urban Des Plann* 170: 83–91. <https://doi.org/10.1680/jurdp.16.00027>
7. Marafa LM, Wang Z, Tsang FKH (2022) Tranquillity in urban classical chinese gardens and modern parks: The effect of natural and contextual features. *Sustainability* 14: 9555. <https://doi.org/10.3390/su14159555>
8. Zhou B (2006) The historical evolution of urban public space—focusing on the evolution of Chinese urban public space in the latter half of the 20th century. PhD dissertation, Sichuan University, Sichuan, China.
9. Hu DX (2006) A brief analysis of the transformation of parks in modern Chinese gardens. *Mark Mod* 1: 298–299. <https://doi.org/10.3969/j.issn.1006-3102.2006.01.191>
10. Su ZL, Chen LF (2000) *Maritime Heroes—Huang Jinrong and Shanghai Society*. Nanjing: Jiangsu People's Publishing House, 199–204.
11. Huang ZS, He GT (2008) The Huang Jinrong I Know (Part 2). *All Circles* 4: 42–44. Available from: https://xueshu.baidu.com/usercenter/paper/show?paperid=1j560tq0hr0s0jm0yt3q0220x6571082&site=xueshu_se.
12. Zhuang ZJ (2010) The collapse of the Huang Family Garden pavilion. *Century* 2: 64–65. Available from: https://www.zhangqiaokeyan.com/academic-journal-cn_century_thesis/0201251261717.html.
13. Fu XY (2008) *Qing Bang Tycoons: An Extracurricular Account of Huang Jinrong, Zhang Xiaolin, and Du Yuesheng*. Shanghai: Shanghai University Press.
14. Huang JR (1935) Views of the Huang Family Garden.
15. Anonymous (1935) Centennial peonies in the Huang Family Garden. *Shen Bao* 13.
16. Anonymous (1937) The Huang Family Garden invites celebrities from all walks of life to celebrate century-old peonies tomorrow. *Shen Bao* 13.
17. Anonymous (1934) Sports meeting sports news—School sports meeting. *Shen Bao* 11.
18. Anonymous (1933) Huang Jinrong founded the Caohejing fire brigade on his own. *Shen Bao* 14.
19. Anonymous (1935) Teenage world: Teenage Chinese language class traveling to Caohejing. *Youth* 35: 10–11.
20. Anonymous (1935) China Children's Culture Association to host garden festival tomorrow. *Shen Bao* 10.
21. Anonymous (1937) City News—East China tour group Longhua one day tour. *Shen Bao* 10.
22. Ministry of Building Construction (1959) Shanghai Urban Master Planning Sketch. The Basic Construction Committee of the Communist Party of Shanghai Municipal Committee: Preliminary opinions on the overall urban planning of Shanghai.
23. Caohejing Town Chronicle Compilation Committee (2020) *Shanghai Xuhui District Caohejing Town Annals (1985–2000)*. Shanghai: Scientific and technical publishers.
24. Corner J (1999) *Recovering Landscape: Essays in Contemporary Landscape Theory*. Princeton: Princeton Architectural Press. <https://doi.org/10.2307/1587130>



AIMS Press

© 2024 the Author(s), licensee AIMS Press. This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>)