ORIGINAL RESEARCH ARTICLE

Urban cartography and spatial politics: Ethnic tensions, westernization, and decolonization in Hangzhou's transformation within the global south

Yihao Wu[1,*], Yikai Qiu[2], Hong Wang[3]

[1] *Department of Architecture, University of Cambridge, Cambridge CB2 1PX, UK*

[2] *Department of Architecture and Urban Studies, Politecnico di Milano, 20156 Milano, Italy*

[3] *College of Design and Architecture, Zhejiang University of Technology, Hangzhou 310023, China*

* Corresponding author: Yihao Wu, yw668@cam.ac.uk

ABSTRACT

Urban morphologies in the global south are shaped by a complex interplay of historical imprints, from colonial legacies and ethnic tensions to waves of modernization and decolonization efforts. This study delves into the urban morphology of Hangzhou during the late 19th and early 20th centuries, unraveling its transformative patterns steered by a convergence of spatial politics, economic forces, and cultural dynamics. Drawing upon a unique blend of historical map restoration techniques, we unearth pivotal morphological nuances that bridge Hangzhou's transition from its pre-modern fabric to its modern-day urban layout. We uncover key shifts such as the movement from intricate street layouts to systematic grids, the strategic integration of public spaces like West Lakeside Park, and the city's evolving urban epicenter mirroring its broader socio-political and economic narratives. These insights not only spotlight Hangzhou's distinct urban journey in the context of ethnic conflicts, Western influences, and decolonization drives but also underscore the value of context-sensitive urban morphological research in the global south. Our findings emphasize the criticality of synergizing varied methodologies and theoretical perspectives to deepen our comprehension of urban transitions, sculpt place identities, and invigorate public imagination in global urban planning.

Keywords: morphological transformation; map archive; cityscape; global south; Hangzhou

1. Introduction

Urban transformations in the global south are intricately woven with the threads of spatial politics[1], underpinned not only by contemporary socio-economic catalysts but also deeply-rooted historical forces such as colonialism, imperialism, and ethnic tensions[2,3]. These historical currents have sculpted unique imprints on urban landscapes, manifesting in hybrid cityscapes that chronicle a rich tapestry of diverse interactions, influences, and ideologies across eras[4]. The cityscape, with its intricate mosaic of structures and spaces, is an unfolding chronicle of its past—a revelation of myriad historical layers, each leaving behind its indelible mark[5,6]. This intricate layering is what current theories, like "transparency"[7], allude to, suggesting that discerning these layers provides invaluable insights into a city's evolutionary tale[8].

Historical cities formed with the influence of foreign cultures in the global south often display hybrid and contested urban identities that result from different processes of cultural exchange and appropriation[9]. While the relentless march towards modernity

refashioned urban spaces, concurrently, the aspiration, especially within post-colonial territories, to preserve and echo a distinctive "sense of place" remained unyielding[10]. This dialectical interplay, balancing the thirst for modernity against the ethos of cultural and historical preservation, anchors the contemporary urban narrative[11,12], emphasizing the dichotomy between organic and constructed elements and the tug-of-war between localized identities and global paradigms[13,14]. These evolutionary pathways often involve a spectrum of responses, from adaptation and resistance to assimilation and hybridization of foreign elements with indigenous ethos.

Traditional urban morphology, rooted in the analysis of European towns, often finds its theories misaligned when applied to cities outside the western context, especially those in the global south[15,16]. These cities, in their journey towards modernization, often witnessed the abrupt eradication of traditional features[17]. The absence of comprehensive historical records or tangible remnants compounds the challenges in understanding the ramifications of these morphological shifts on their inhabitants. Nevertheless, map archives emerge as silent chronicles, offering glimpses into the urban transformations across eras[18]. While Europe's cartographic prowess flourished since the Renaissance, the global south, including many non-western nations, lagged in capturing precise geographical representations in ancient times.

Within this broader landscape, Chinese cities offer a unique perspective. Although never fully colonized, China experienced a rich tapestry of foreign engagements, concessions, and exchanges[19,20]. These external interactions, interwoven with China's deep historical and cultural fabric, have collaboratively crafted distinct urban narratives. Hangzhou stands as a poignant testament to this, capturing not only western interactions but also a blend of indigenous urban traditions and the intricacies of modernity[21]. As the cartography technology in pre-modern China was relatively primitive, original map archives often lack the precision necessary for direct analysis. Hence, to unravel the morphological intricacies of cities like Hangzhou, we employ a map restoration approach. Using Hangzhou as our investigative epicenter, this paper harnesses archaeological methodologies to decipher pivotal morphological nuances that bridge both its pre-modern and modern eras.

2. Literature review

2.1. Urban morphology

Urban morphology, as a discipline, investigates the form, structure, and development of urban settlements[22,23]. Originating from Europe, the field has seen varied theoretical and methodological approaches. The European school, particularly the works of Caniggia and Maffei[24], emphasizes the evolution of urban forms in response to societal changes. Their perspective, which integrates the spatial and temporal dynamics of cities, is particularly relevant to our study of Hangzhou. More recent studies have focused on the transformation of cities in the global south and their unique characteristics. These studies, while recognizing the influence of western urban principles, underline the distinctive socio-cultural, political, and economic factors driving urban change in southern contexts[16,25]. For instance, some scholars have explored the role of colonialism, nationalism, and globalization in shaping the urban morphology of South Asian cities[26,27]. Others have examined the impact of rapid urbanization, industrialization, and modernization on the urban form and structure of Latin American cities[28]. These studies highlight the diversity and complexity of urban morphology in Asia, as well as the need for quantitative and comprehensive models to understand it[29].

2.2. Urban transformations in the global south

Cities in the global south have undergone diverse and complex urban transformations, influenced by intricate socio-political and cultural dynamics[30]. The legacies of colonization, decolonization, and subsequent modernization have left indelible marks on the urban fabric of these cities, shaping their distinctive identities[31]. These historical factors have shaped the urban form and culture of many cities in the global south, creating hybrid and diverse urban landscapes that reflect the interactions and influences of different actors,

institutions, and ideologies over time[1,32]. Historical cities formed with the influence of foreign cultures in the global south often exhibit multiple layers of urban form that result from different periods of urban development and transformation[33]. These layers may include pre-colonial, colonial, post-colonial, and contemporary urban forms that coexist or overlap in the same urban space. Scholars have pointed out that these layers may create spatial contrasts or continuities that reflect different histories, cultures, and power relations in the city[34].

2.3. Historical mapping and archival exploration

Historical mapping is a valuable source of information for understanding the spatial and temporal dynamics of urban form and culture. However, historical maps are not simply objective representations of reality, but rather products of specific historical contexts, cartographic conventions, and ideological agendas[35,36]. Therefore, to use historical maps as evidence for urban research, it is necessary to critically examine their accuracy, reliability, and meaning in relation to the original purposes and audiences of the mapmakers[37,38]. One way to approach historical mapping as a research method is to use archival exploration to compare different maps of the same urban area over time or across different sources[18]. Archival exploration involves searching, selecting, and analyzing relevant historical documents and records that can provide additional insights into the urban history and geography of a given place[39,40]. By combining historical mapping and archival exploration, urban researchers can uncover the spatial patterns, social processes, and cultural meanings that shaped the urban form and experience of past cities[41,42].

2.4. Research gap

Urban transformations of historical cities in the global south, particularly those that have experienced the dual forces of colonization and decolonization[2,9], have been a pivotal yet underexplored area of urban morphological research. These cities, marked by unique amalgamations of indigenous traditions and colonial imprints, offer rich terrains for understanding urban evolution. The story of such cities often contrasts with their counterparts in the global north, given the different socio-political and cultural dynamics at play. Hangzhou stands as a quintessential example within this broader category. The city's transformation navigates the intricate landscapes of traditional Chinese values and western influences. While European morphological theories provide a foundational backdrop, they may not encapsulate the nuanced changes experienced by cities during the drastic transformation of the modern shift. Furthermore, while advanced mapping techniques have been widely employed in various contexts, their detailed application in mapping the evolution of cities in the global south, especially one as historically significant as Hangzhou, remains a niche area of study. Our investigation aims to bridge this notable gap, marrying the broader narratives of urban transformations in the global south with the specific intricacies of Hangzhou's urban history, using archival exploration as the primary tool to reveal the multiple layers of cityscape transformation.

3. Research focus and context

3.1. Research question

Cities in the global south, with their intricate histories shaped by colonization, decolonization, and ensuing modern transitions, embody a tapestry of change that, while captivating, remains inadequately explored within urban morphology studies. Immersed in discourses around urban shifts, historical mapping, and archival navigation, our study endeavors to disentangle the myriad complexities woven by the fusion of indigenous traditions and external influences. At the heart of this exploration lie our pivotal research queries:

How has Hangzhou's urban form metamorphosed amidst the confluence of traditional Chinese ethos, external western impositions, and broader spatial-political shifts emblematic of cities in the global south, particularly during the turbulent epoch spanning the late 19th and early 20th centuries' semi-colonization?

In what ways can historical map archives and documented narratives illuminate the intricate stratifications of Hangzhou's urban evolution, resonating with broader urban transformation narratives in the global south?

With these questions as our compass, we harness the power of historical maps and narratives, immersing ourselves in the multifaceted socio-political, economic, and cultural dynamics. While our methodology anchors itself in the specificities of Hangzhou's transformative journey, we aspire to extrapolate patterns and wisdom that resonate with scholars exploring analogous metamorphoses in other global south cities. Our goal, through a meticulous interrogation of these maps and narratives, is twofold: To provide a granular insight into Hangzhou's urban evolution and to scaffold a conceptual framework enriching the broader discourse on urban morphology in post-colonial landscapes.

3.2. Study area

Hangzhou, situated in the southern wing of the Yangtze River Delta, currently serves as the provincial capital of Zhejiang Province (**Figure 1**). Boasting a rich history, Hangzhou was the capital of the Wu Yue and Southern Song Dynasties (known as Lin'an or Kaifeng) and is counted among China's "seven ancient capitals"[43]. Renowned for its picturesque landscape, Hangzhou, along with Suzhou, is often referred to as "heaven on earth". About eight hundred years ago, Venetian merchant Marco Polo journeyed across Asia along the Silk Road, and his account of his travels praises Hangzhou as "beyond dispute the finest and noblest in the world"[44]. Geographically, the city lies to the west of the world-famous West Lake, with mountains stretching from the north and south into the urban area[45], creating a stunning city silhouette.
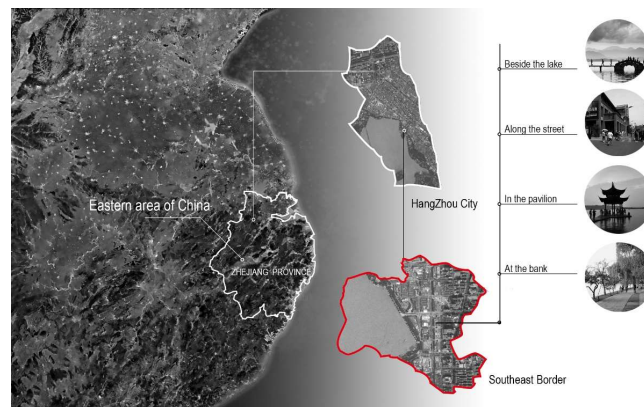

Figure 1. Location of Hangzhou and its southeast border.

During the late 19th and early 20th centuries, Hangzhou, like many urban centers in China, was thrust into a complex geopolitical landscape[46]. The semi-colonial status of China during this period introduced a multitude of foreign influences into the city. The influx of western ideas, trade, and even architecture began reshaping the city's urban fabric, juxtaposing its deep-rooted Chinese traditions with the encroaching modernity of the west. The interplay of these forces imbued Hangzhou with a hybridized character, as seen in its urban morphology, which bears both the indelible marks of its past and the nascent trends of its contemporary evolution. A salient manifestation of this was the establishment of the Japanese concession[47], emblematic of the broader encroachments that many cities in the global south faced. This period marked a tangible interplay of power, culture, and urban morphology in Hangzhou, as foreign infrastructures, ideologies, and administrative methods began to infiltrate and sometimes even overshadow the city's indigenous character.

4. Methodology

To thoroughly dissect the complexities of Hangzhou's urban transformation, a rigorous methodological approach is indispensable. Our methodology bifurcates into two intertwined components: map analysis and

socio-historical cross-referencing. By synergizing these methods, we aim to bridge Hangzhou's spatial changes with its underlying historical narratives.

4.1. Map analysis procedure

The foundation of our study is built upon a comprehensive analysis of archival maps that depict Hangzhou's urban evolution. The initial task involved curating a collection of maps spanning the late Qing and early Republic periods. These were not just randomly selected but were handpicked based on their accuracy, detail, and representation of notable urban changes. Once the map selection was complete, each was subjected to a rigorous restoration procedure. The aim was not only to enhance their readability but also to correct any potential discrepancies or wear from the passage of time. Advanced digital techniques, combined with traditional restoration methods, ensured that each map retained its original essence while being prepared for contemporary analysis.

The next phase entailed decoding the myriad elements on these restored maps. We employed a systematic approach to categorize the depicted urban changes. For instance, we identified the specific routes of newly constructed roads, pinpointed the emergence of commercial centers, and tracked residential expansions. We also looked for subtle clues that might represent broader societal shifts. For example, changes in urban design might reflect the city's growing openness to foreign influences or modernization. Each observation was meticulously noted and chronologically aligned, ensuring that our narrative remained consistent with the actual temporal progression of the city (**Figure 2**). This procedural approach allowed us to transform these static maps into dynamic representations, each narrating a unique chapter in Hangzhou's urban story.
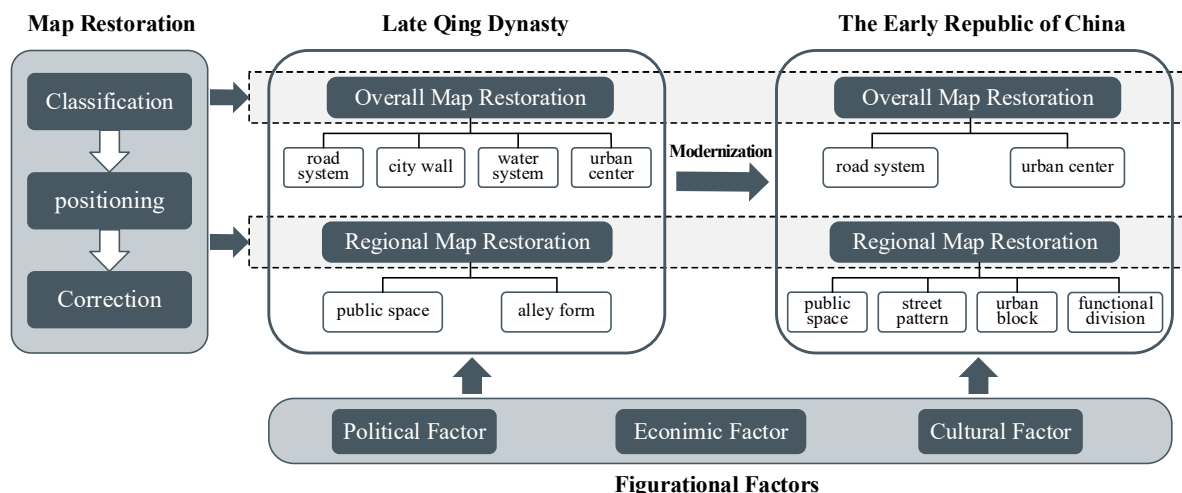

Figure 2. Research framework.

4.2. Socio-historical cross-referencing

The deeper layer of our methodology involves intertwining the tangible data from maps with the socio-political and economic milieu of the era. To breathe life into the morphological observations, we sourced insights from primary historical materials—newspapers, official records, and economic indicators, among others. For instance, the transformation of the Manchu city wall wasn't just a physical change; our exploration dived into the political archives, extracting events and sentiments that might have catalyzed this transformation. The narratives we constructed are not isolated snapshots but a cohesive journey, seamlessly integrating the spatial observations with their underlying socio-historical motivations. Within this rigorous methodology, we also recognize some inherent limitations. Periods of data sparsity, whether in map availability or an ambiguous socio-historical context, posed challenges. Nevertheless, our assertions throughout this study remain anchored to the best available data, ensuring both reliability and depth.

4.3. Hierarchical system

In our endeavor to shed light on Hangzhou's urban transformation, our map restoration process distinctly leans on two critical strands: overall map restoration and regional map restoration. Each of these approaches, while having its own unique emphasis, meticulously encapsulates a suite of morphological elements pivotal for charting Hangzhou's urban progression.

- Macro-level morphological elements:

  1) Urban grid and structure: capture the principal layout and organization of the city.
  2) Land-use patterns: highlight dominant zoning classifications, like residential, commercial, or recreational areas.
  3) Major infrastructure and urban landmarks: mark significant structures that serve as historical or cultural nodes.

- Micro-level morphological elements:

  1) Neighborhood and district layout focuses on the individual characteristics of specific neighborhoods or districts.
  2) Public spaces and gathering points: Explores communal spaces such as squares, parks, and other recreational areas.
  3) Transportation nodes and streets: documents central transit hubs and provides a granular study of specific streets, alleys, and pathways.

5. Ethnic tensions and spatial politics: Urban form in the late Qing Dynasty

The Qing Dynasty (1636–1912), orchestrated by the Manchu leaders, marked the last chapter in China's grand narrative of imperial rule. A defining architectural and urban feature of this era in numerous local cities was the "Eight Banners" garrison[48], which stood as a testament to military deployment for over two and a half centuries. Among the first to adopt this urban schema, Hangzhou witnessed the establishment of the Eight Banners garrison camp to the east of its iconic West Lake. This strategic move not only reshaped the city's urban contours but also cast long shadows on its social fabric[49].

The friction in spatial territories between the Manchu and Han populations carved a schism in Hangzhou's heart, bifurcating it into the outer city, primarily inhabited by the Han, and the inner city, which became the stronghold of the Manchu[50].This urban cleavage culminated in the construction of the double city wall, a characteristic feature of late Qing urban design. This dual wall not only fragmented the city's physical landscape but also underscored the deep-seated divisions within its populace. In 1896, Hangzhou's urban fabric underwent another transformation with the establishment of the Japanese concession. As foreign powers vied for influence in China, Hangzhou became a stage where geopolitical dynamics played out in urban terms. The Japanese concession introduced new architectural styles, urban planning principles, and socioeconomic dynamics. Its proximity and contrast to the established Manchu and Han areas further accentuated the city's composite identity, weaving together native traditions with foreign imprints.

5.1. Overall map restoration

The cornerstone for our map archive restoration during the Qing Dynasty is the significant Zhe Jiang Sheng Cheng Tu. This map holds a distinctive place in the cartographic history of Hangzhou. Published by the Zhejiang Map Bureau in the 18th year of the Guangxu era (1892), it measures 97 cm in length and 58 cm in width. Prestigious collections, such as the Zhejiang Library, have the privilege of housing this invaluable piece. The creation of the Zhe Jiang Sheng Cheng Tu coincided with Zhejiang Province's endeavor to compile the Great Qing Huidian Map. What sets this map apart is its transitional nature: it embodies a shift from traditional surveying techniques, which relied on methods like measuring distance and drawing squares, to the

embracement of modern surveying techniques. As a testament to its advanced precision, it offers a marked improvement over its predecessors. This heightened accuracy meant it swiftly superseded previous Hangzhou city maps, becoming the gold standard for the city's cartographic representation.

In addition, four other maps serve as auxiliary references for the restoration process (**Table 1** left). The final restoration map on the overall scale of the late Qing Dynasty is shown in **Figure 3**, including the layers of alleys and important buildings. Using map archive restoration, we can analyze critical morphological information through various elements (**Figure 3**).

Table 1. Map archive list of Qing Dynasty and Republic of China.

Late Qing Dynasty			Republic of China		
Map name	Year	Reference value	Map name	Year	Reference value
Zhe Jiang Sheng Cheng Tu	1892	★★★★	Hangzhou Shi Jie Tu	1930	★★★★
Zhe Jiang Sheng Huan Cheng Xiang Tu	1877	★★★	Hang Xian Wu Li Fang Tu	1915	★★
Fu Cheng Tu	1792	★★	Zhe Jiang Sheng Hang Xian Tu	1942	★
Hui Cheng Tu	1732	★	Hangzhou Du Tu Di Tu Ji	1934	★★★
Hangzhou Fu Tu	1561	★	Hangzhou Xi Hu Quan Jing Tu	1920	★

Historical Map
(*Zhe Jiang Sheng Cheng Tu*)

Alley

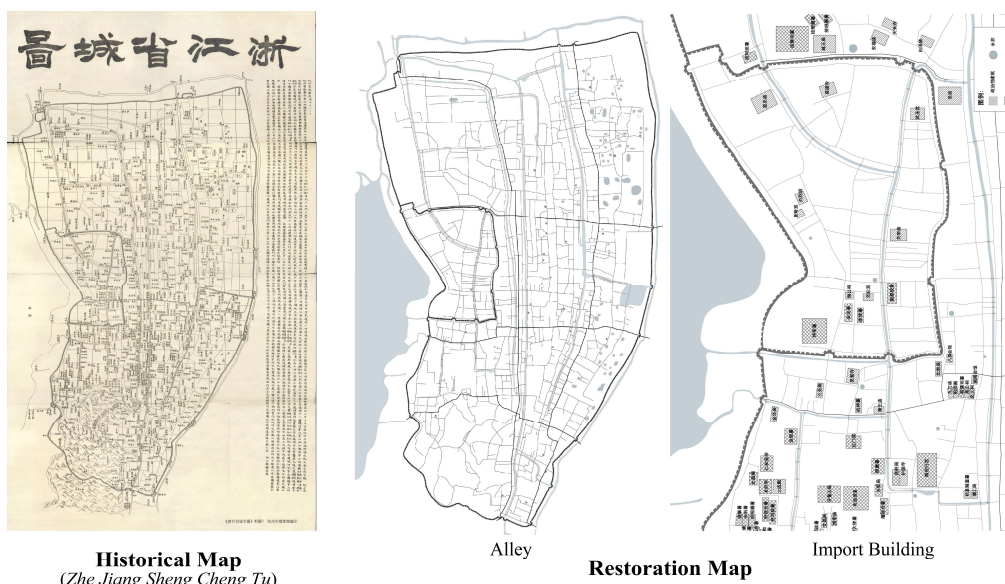**Restoration Map**

Import Building

Figure 3. Hangzhou restoration map in overall scale of late Qing Dynasty.

5.1.1. Road system

In the late Qing period, Hangzhou's urban road system was primarily oriented north-to-south, with an overall layout of "three horizontals and two verticals". Lanes on both sides of the main road were arranged in sequence and interconnected, integrating with the overall layout and conforming to the city's river trends. However, on the city's edge, such as the areas surrounding Wushan Mountain, small streets and alleys were relatively sparse. The Manchu city wall, despite separating the inner-city space, maintained a strong connection with the road system.

5.1.2. City wall

Hangzhou's external wall extended longer from north-to-south and shorter from east-to-west (14,770 m). The outer city wall had 15 land gates and nine water gates, contrasting with the relationship between the city wall and water system in China's central plains[51]. As a result, water transportation was just as vital as land transportation in Hangzhou. The West Lake boundary's influence on the southwest led to the inner wall's

irregular, embedded shape within the city, which was roughly rectangular (3050 m). The inner city's establishment turned the outer city into a "concave" shape, hindering the connection between the southwest and northwest parts of the city. Consequently, the inner city exacerbated the opposition between the Manchu ruling class and the Han people.

5.1.3. Water system

In the late Qing Dynasty, Hangzhou's primary waterway transportation system consisted of four rivers: the Qinghu River, the Xiaohe River, the Zhonghe River, and the Donghe River. These rivers connected the Beijing-Hangzhou Grand Canal and the Qiantang River, running parallel to the two longitudinal directions of land transportation. In contrast to the linear water system, many ponds existed in the city's east, distributed along the east wall. Considering the relatively sparse small and medium-sized streets and lanes, it is plausible that the eastern part of Hangzhou had a smaller residential population at the time.

5.1.4. Urban center

The urban center refers to the core area of the city, where commercial and political institutions agglomerate[52]. In the Qing Dynasty, Hangzhou's economic center had historical continuity with Lin'an Fucheng from the Southern Song Dynasty. Most markets and commercial streets were situated around Guankou Alley. The most significant difference was the negative impact of Manchu City, which hampered the development of the commercial center. On the other hand, the political center of Hangzhou during the Qing Dynasty was located on the southwest border of the city, corresponding to the government's location. As a result, the commercial center and political center were spatially mismatched.

5.2. Regional map restoration

On a regional scale, our focus narrows to the intricacies of neighborhoods, plots, alleys, and open spaces, utilizing the unparalleled details of the ZheJiang Sheng Huan Cheng Xiang Tu. Comprising one general map and 78 sub-maps, spanning 728 cm by 378 cm, this map is a cartographic masterpiece from the Qing Dynasty. Produced by the Zhejiang Official Book Bureau between 1877 and 1879 during Governor Mei Qizhao's tenure, it likely incorporates city land data from the early Guangxu period, reflecting Hangzhou's resurgence post-the Xianfeng Rebellion. Today, a significant portion of this map's plates are preserved in the Zhejiang library, making it an invaluable source for our regional restoration efforts. Partial results of map restoration on a regional scale are presented in **Figure 4**, including Xibi Fang and Songsheng Fang (Fang was a peculiar management unit in traditional Chinese cities at the lowest level).
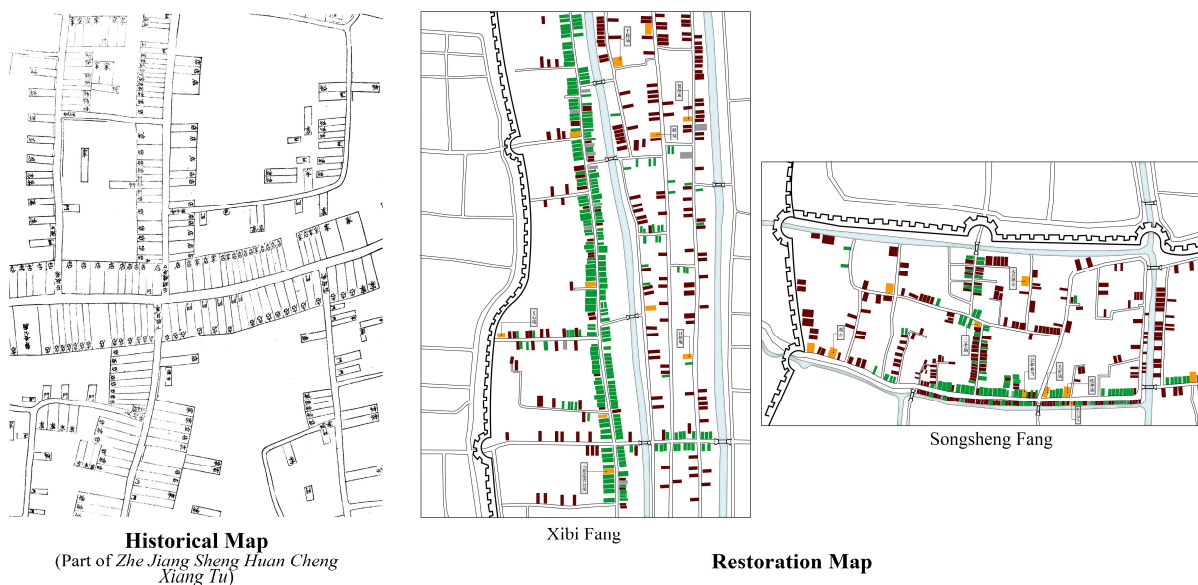

Historical Map
(Part of *Zhe Jiang Sheng Huan Cheng Xiang Tu*)

Xibi Fang

Songsheng Fang

Restoration Map

Figure 4. Hangzhou restoration map in regional scale of late Qing Dynasty.

5.2.1. Open public space

In this paper, urban public spaces reflected in the restoration map of the Qing Dynasty are roughly divided into two categories. The first is linear street space. Since the Song Dynasty, "streets" have become an essential carrier for mutual exchanges and public activities due to the closure of Li-Fang walls and market openings[53]. In the context of traditional Chinese cities, streets bore more than a single traffic function. The public function made the streets a prime interface for various urban activities. The intersection and combination of different functions were reflected in various paintings, showing market prosperity. From the whole city's corridor system perspective, not all roads became linear "street markets," and the "markets" on both sides of the road were essential to all kinds of public life and constituted publicity.

Compared to linear street space, various public buildings catered to different people's specific needs and gathered individuals from different backgrounds. Temples and ancestral halls were typical representatives of such public buildings, where a considerable area of external open space was surrounded. These spot-distributed open spaces were in close relationship with urban streets, whether at the intersection of two streets or on both sides along the main road. Specific site selection was significantly affected by the social superstructure, and these spaces were vulnerable to destruction in the wave of modernization, presenting unstable spatial characteristics.

5.2.2. Alley form

Alleys were the low-ranking traffic roads in ancient Chinese cities, and urban alley forms were considered typical representatives of adaptive development. Adaptability refers to a system's continuous development through element reorganization, structural adjustment, or various control strategies within environmental changes. Environmental retardation factors were reflected in various natural and artificial characteristics, such as hydrological conditions and city walls in ancient Hangzhou, which significantly impacted alley form.

Overall, the north-south alleys in the inner city were shaped by the city wall's contour, showing a fitting curve consistent with it. Meanwhile, laterally intensive roads gathered centripetally perpendicular to the city wall's outline. From a broader environmental perspective, the southwest city wall's boundary shape was closely related to the southeast revetment of West Lake. This potential regularity was not accidental. In most settlements in China's Yangtze River region, there was a pattern of "streets parallel to the Yangtze River and roads perpendicular to the Yangtze River". It not only showed the restraining effect of natural forms on artificial systems but also reflected the spirit of place and regionalism.

Regarding the relevance of alleys and the Manchu city wall, alleys associated with them could be divided into five categories:

a) roads directly connected with the Manchu city gate and accessible to the internal roads of the Manchu city;
b) roads outside the Manchu city and ending at the wall;
c) roads inside the Manchu city and ending at the wall;
d) roads outside the Manchu city and parallel to a section of the city wall's boundary;
e) roads inside the Manchu city and parallel to a section of the city wall's boundary.

The number of each category based on the restoration map is displayed in the statistic chart (**Figure 5**). Whether inside or outside the flag camp, the number of alleys blocked by the city wall was far greater than the roads connecting the city gate and the roads surrounding it.
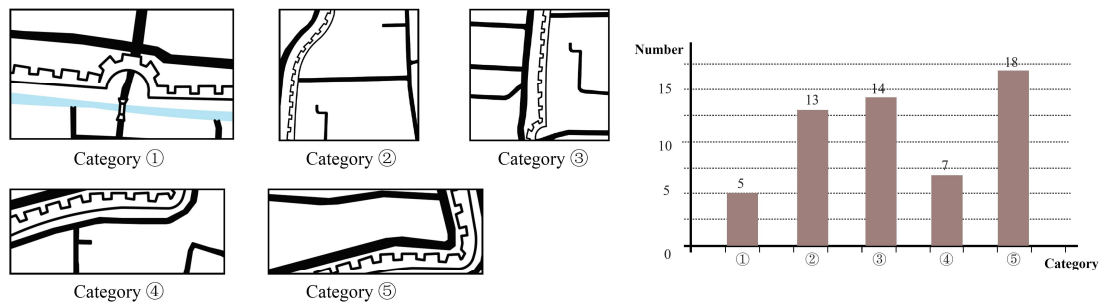
Figure 5. Five categories of alley form sample and statistics.

6. From westernization to decolonization: Urban form in the ROC

The Republic of China (ROC) period (1912–1949) stands as a transformative epoch in China's urban history. Following the fall of the Qing Dynasty in 1911, the entire nation underwent substantial political, social, and cultural shifts, deeply impacting urban landscapes[53,54]. While a few coastal port cities had already embarked on paths to modernization, many inland cities, including Hangzhou, found their true metamorphosis catalyzed during this era. In 1911, Hangzhou, like much of the nation, was swept by the transformative political currents of the Revolution. By year's end, representatives of the Manchu dynasty and the revolutionary army brokered a peace treaty, marking a profound shift in urban governance[55]. The revolutionary military government's ensuing land reforms saw vast tracts, previously under military occupation, being repurposed. Chu Fucheng, a visionary city decision-maker educated in the west, was instrumental in charting a new urban course for Hangzhou[47,56]. His affinity for modernism, combined with the ethos of the new era, translated into an urban vision centered on industrial and commercial expansion. Reflecting this vision, he advocated, "except for roads and public land, the rest of the land should be sold to build a commercial market".

Consequently, the old Manchu city, a testament to an era bygone, gave way to the new market. This commercial nucleus was not merely a center of trade but represented Hangzhou's embrace of modernity. Architectural and planning principles of the West informed its design—the streets were laid out in a grid, their straightness symbolizing the city's forward trajectory, and they intersected at right angles, exemplifying a harmony between the old and the new. This era saw not just the transformation of physical structures but a deeper, more intrinsic evolution. The roads, markets, and public squares became arenas where traditional Chinese sensibilities met the burgeoning ideas of the Republic. The urban morphology of Hangzhou during this period, thus, was not merely a response to political change; it was an embodiment of a nation's journey through self-definition and modernity.

While much of the urban transformation during this period echoed the call for modernity and progress, the ROC era also bore witness to significant decolonization efforts. Hangzhou, like several other Chinese cities, had to grapple with the remnants of foreign dominions, such as the second Sino-Japanese War[57]. The process of decolonization was not just about reclaiming territories but also involved a deeper introspection into the city's identity and heritage. The city planners and decision-makers undertook a dual task: constructing a Hangzhou that was open to global influences and innovations, and re-establishing the city's autonomy and cultural ethos. This period marked the deliberate weaving of Hangzhou's past into its evolving urban narrative, ensuring that while the city modernized, it did not lose its connection to its rich history and heritage.

6.1. Overall map restoration

The primary reference for map archive restoration in the Early ROC is based on Hangzhou Shi Jie Tu (**Table 1** right). This map, sold in the Hangzhou West Lake Zhongshan bookstore in the 1930s, used advanced measurement technology, greatly improving accuracy compared to the map archives of Hangzhou in the late

Qing Dynasty. It clearly shows the urban pattern of Hangzhou before the outbreak of the Anti-Japanese War (**Figure 6**).

Historical Map
(*Hangzhou Shi Jie Tu*)

Alley
Restoration Map

Building

Figure 6. Hangzhou restoration map in overall scale of early ROC.

6.1.1. Road system

Two major changes to Hangzhou's road system occurred in the ROC: the first is the checkerboard-shaped road built in the new market district (1914)[56], and the second is the construction of the road around West Lake, which not only improved tourism conditions but also connected with the new market roads. These new roads greatly promoted Hangzhou's urban economy and social vitality.

Compared to Hangzhou's urban road network in the late Qing Dynasty, urban roads expanded outward as the city grew. With the introduction of vehicles from western countries, the automobile road, a new road type at that time, appeared. The checkerboard road planning and layout in the new market plan became the first practice of the modern planning system in Hangzhou, contrasting sharply with the previous road layout in Manchu city. Meanwhile, the entire old city walls and gates were demolished in a few years. Hangzhou's municipal government built Hubin Road and Nanshan Road with the original wall bricks and stones, auctioning the remaining part as part of the road construction funds to fulfill the new market plan. The demolition of Manchu city and city walls promoted the integration of the city and West Lake, as proved in the planning of a pure modern road system, albeit at the expense of effacing historical information and phenomena.

6.1.2. Urban center

During the period from 1913, when Manchu city was demolished, to 1916, when the road network in the new market was almost completed, the leadership of the Hangzhou Republic government played a vital role in urban modernization. As a result, people from all walks of life were attracted to the new lakeside market due to the convenient transportation and beautiful scenery. The district gradually matured and flourished in the 1930s when landmark buildings, including the Big World, People's Education Hall, and National Goods Exhibition Hall, were completed. The completion and opening of these three landmark buildings, along with the influx of a large amount of capital from Shanghai, marked the formal maturity of the new market and the completion of the construction of the new center in Hangzhou at that time.

Compared to the commercial centers along the Zhonghe River and Xiaohe River in the late Qing Dynasty, Hangzhou officially entered the "double center" integration stage, with two commercial centers: the new market and Zhongshan Middle Road. This development represents the city's evolution and growth during the

11

ROC as it adapted to new political, economic, and cultural influences while still retaining elements of its traditional character.

6.2. Regional map restoration

From a regional-scale perspective, the restoration of the new market district primarily uses Hangzhou Du Tu Di Tu Ji as a reference. This map collection, containing 184 regional maps of Hangzhou city and its surrounding areas, was compiled and printed by the Department of Civil Affairs of Zhejiang Province from 1931 to 1934. Although there are numerous map archives from the ROC, the drawing resolution generally reaches the level of road depth, making it challenging to read building information about functions, forms, and heights. To address this issue, the team utilized satellite images of Hangzhou city taken by the United States Geological Survey (USGS) in the 1960s as auxiliary material, along with many files, newspapers, local chronicles, travel notes, and other historical materials, to obtain urban information for map correction (**Figure 7**).
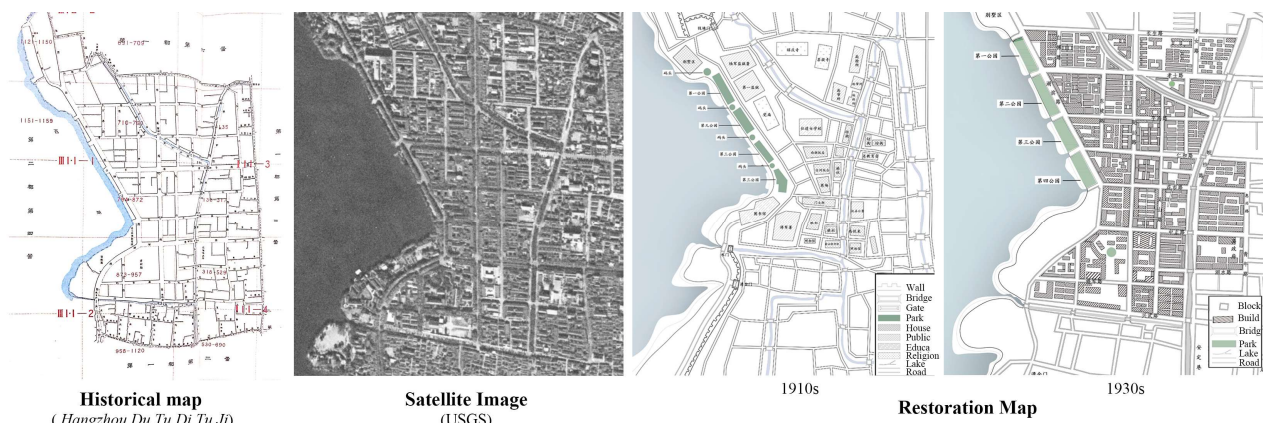

Historical map
(*Hangzhou Du Tu Di Tu Ji*)

Satellite Image
(USGS)

1910s
Restoration Map
1930s

Figure 7. Hangzhou restoration map in regional scale of ROC.

6.2.1. Public space

When analyzing urban public space in the late Qing Dynasty, the organization mode and principles in traditional Chinese cities primarily consisted of linear street markets and dot-shaped public buildings. This was due to the long-term development of adapting to the dual factors of the social system and settlement mode. In contrast, the emergence of urban parks in the ROC symbolized the modern transformation of traditional cities. Urban parks are public lands built in cities for urban citizens or other purposes, and their primary feature is publicity[58]. The emergence of urban park space in the ROC was influenced by western ideas rather than the result of spontaneous evolution.

Following the demolition of Manchu City, the construction of Lakeside Park was prioritized. Using Pinghai Road, Renhe Road, Post and Youdian Road, and Xueshi Road as boundaries, the Lakeside Park was divided into five sections. Lakeside Park, which was the first western-style city park in Hangzhou built independently by the government for citizens' leisure and entertainment, was designed by urban planners to make full use of urban spare land. Lakeside Park had unique geographical advantages, facing West Lake, having its own beautiful scenery, and only being connected to urban areas on one side. Rather than being a typical enclosed space, Lakeside Park was a highly open linear extension space, making it a unique waterfront space from a modern urban design theory perspective.

6.2.2. Street pattern

From the beginning of the new market plan, streets were the basic linear elements used by urban planners to divide land lots. When the Manchu city wall was demolished thoroughly, a new street pattern was urgently needed to replace the original one. The concept of checkerboard streets and street classification in Western

planning theory reflected progressiveness and forward-looking ideology. To this day, the streets in the lakeside area are still a continuation of the new market in the 1920s (**Figure 8**).
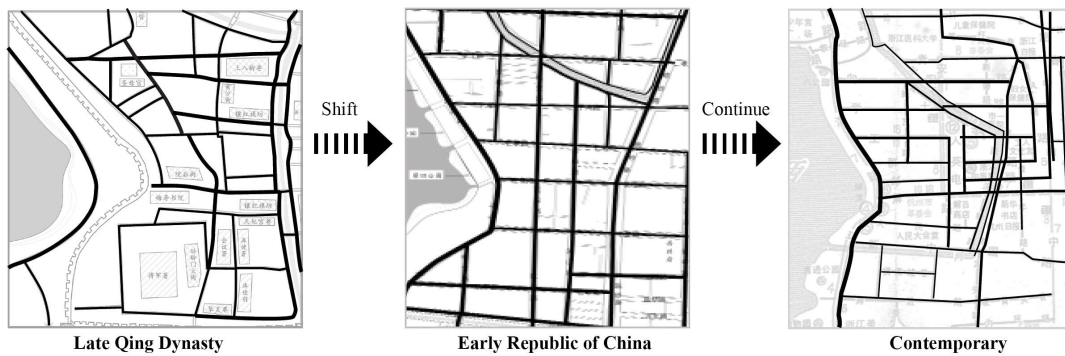

| Late Qing Dynasty | Early Republic of China | Contemporary |

Figure 8. Evolution of street patten in new market district.

The idea of street classification met the needs of modern urban traffic development. Except for Hubin Road, the other three first-class roads were part of a horizontal and vertical orthogonal structure, dividing the area into six independent blocks. This orthogonal structure reflected the pursuit of practicality and performance in urban space, even though it ignored the negative impact of natural elements and historical heritage and represented low elasticity in principle. Meanwhile, secondary roads were more likely to take the impact of waterways within the scope of the new market into account, reflecting the elastic law constrained by natural factors.

6.2.3. Urban block

Before modern times, the concept of "block" did not exist in traditional Chinese cities to some extent. Like the morphological analysis in the late Qing Dynasty, streets and alleys made up traditional urban spaces. The urban block is a new concept borrowed from western cities, defined as the space within the street pattern. The traditional urban form, which was always most manifested in linear elements where all sorts of activities took place, was now replaced by a more compact structure based on urban blocks with different functions. As for the block form in the new market district, there were several key features to mention:

a) High density: Using the street outline as the basis for calculating, the physical part accounts for around 80% of the total area, with many of them belonging to residential buildings (shikumen gate housings[59]) (**Figure 9**). Compared with residential buildings such as villas or western-style houses, they had a high tendency for land-intensive use, resulting in a relatively compact block texture.

b) Self-similarity: Each residential unit in blocks was similar to one another and planned in order according to land economic rationality for sale.

c) Enclosure: The interface of the outer circle of the buildings surrounding the street outline remained closed, reflecting the high integrity and enclosure of the street outline.
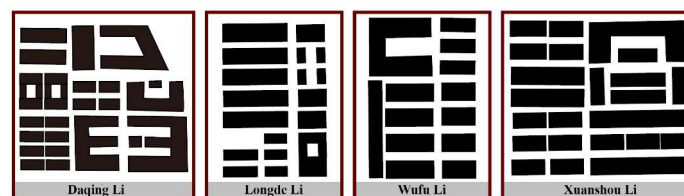

| Daqing Li | Longde Li | Wufu Li | Xuanshou Li |

Figure 9. Figure-ground texture of typical blocks in new market district.

6.2.4. Functional division

The different functions of the blocks in the new market district were actually the result of their implementation throughout the new market plan in the early ROC. It is important to note that the current urban

planning system nowadays has a very detailed classification of land use. However, in the early ROC, there was no clear functional division standard for urban land use in operation. When the Athens Charter formally proposed the concept of urban functional zoning in 1933, the development of the new market had already been completed. Therefore, research can only make a broad classification of the new market district based on map archives. There were three primary functional categories that could be recognized:

a) Shikumen gate houses: Shikumen was favored by "white-collar workers" at that time, while villas and western-style buildings were symbols of status. However, different kinds of houses were not completely isolated from each other in terms of spatial distribution. It was not unusual for Shikumen blocks to have several courtyard villas within them. In this regard, it is similar to some contemporary commercial housing developments, which have both apartments and villas. Western-style buildings, due to their characteristics, were often distributed along the lake or along the street.

b) Tea houses: Tea houses have been ranked as the most important public space for entertaining and relaxing in Chinese cities since ancient times. There were basically two types of teahouses in the new market district. One was distributed along West Lake, with elegant decoration and frequent quotations from literati. The other one was mainly distributed in business centers, primarily for exchange, where businessmen discussed business. This also reflects the central position of the new market business district at that time and the diversity of business activities through the modernization process.

c) Public buildings: Along West Lake in the new market, there were several large public buildings. These comprehensive public buildings constituted the core of the new market district and became the entertainment, leisure, and shopping centers.

d) Discussion: Spatial politics and cityscape transformation

The urban morphological transformation, especially in the context of the global south, is a multifaceted phenomenon that transcends mere formal appearances. Rather, the form itself encapsulates profound historical, socio-political, and cultural narratives that offer rich insights. These narratives, when explored through a city like Hangzhou, can resonate with broader urban shifts experienced across the global south, illuminating patterns of evolution and adaptation. Employing Norbert Elias's figurational study[13,60]—originally rooted in sociological frameworks—gives us a fresh perspective on urban morphology. This figurational approach unveils the dynamic interplays and processes intrinsic to urban transformations, spotlighting transitionary phases pivotal in deciphering the present-day urban tapestry. We meticulously delved into the map archives of Hangzhou across varied scales, focusing our attention on the iconic epochs of the late Qing and the early Republic. In these periods, transformative elements like the overhaul of the Manchu city wall or the intricate laws steering the broader urban morphological design illuminate the city's journey. Notably, the fervor of modernization, peaking after the 1911 Revolution, catalyzed Hangzhou's distinct morphological transition.

7.1. Political factor

The transition from the Eight Banners camp to the new market signifies more than mere architectural shifts; it embodies the evolution of spatial politics, with the emblem of Manchu military occupation transforming into a bustling commercial nucleus. The urban morphology of Hangzhou during the Qing Dynasty was heavily dictated by the prevailing political currents. As the Manchus held the reins of power, the establishment of flag camps wasn't just strategic military positioning but a spatial assertion of their political dominance. Central to the city's morphology was the intricate dance of power and space between the ruling Manchus and the Han. This dynamic was crystallized in the architectural imprints of the city, where inner-city walls not only demarcated territorial bounds but also symbolized the undercurrents of ethnic tensions and power hierarchies. However, winds of change blew with the 1911 Revolution, where the clarion call wasn't just political reform but spatial decolonization. "Anti-Manchu" sentiments weren't merely verbal slogans but translated into tangible actions, such as "liberating flag camp" initiatives and movements to "eradicate symbols

of Manchu rule". This fervor spurred urban upheavals, epitomized by the city demolition movement. Arguably, evaluating Hangzhou's urban evolution solely through morphological lenses would be myopic, sidelining the profound influences of spatial politics. It's imperative to recognize that every brick laid, every wall erected, and every space repurposed bore the weight of the era's political milieu. An authentic understanding of Hangzhou's morphological transformation mandates a deep dive into its spatial politics, intertwined with historical events, ensuring a holistic appraisal of its urban trajectory.

7.2. Economic factor

The quality of the economic environment is of great significance to the urban modernization process, as it determines the direction, strength, and success of urban social development. To some extent, during the Ming and Qing Dynasties, Hangzhou's industrial structure had already adjusted and transformed towards a crude market economy, with the city's industry and commerce containing a number of "modernity factors." The urban space, such as the prosperity of the silk trade on East Street (from Genshan Gate to the South and Taiping Bridge) and numerous shops in the Qinghe Fang area, all reflected commercial characteristics. However, in ancient China, there had always been a strong political curb on economic development. In contrast, the ROC stimulated urbanization, with the planning and construction process of the new market being the most prominent example. The 1930s, considered Hangzhou's "golden decade" for industry and commerce, led to the transfer of Hangzhou's urban center to the southeast border. Nevertheless, it is undeniable that the use of administrative means to implement economic instruments still falls within the political category.

7.3. Cultural factor

Culture forges the "soft foundation" of urban form. In the process of modern urban development, "Westernization" is the core motif for social and cultural changes. Since the late Qing Dynasty, the concept of "new" has become popular among citizens, with western elements often representing advancement in people's minds. Concurrently, the consciousness of modernity gradually spread and captured the hearts of social elites. This was a passive and corresponding approach adopted by the Chinese to overcome their backwardness and eliminate external threats, driven by patriotism. Consequently, although the planning and construction of the new market were based on a brand-new paradigm, it did not materialize out of thin air but rather relied on the general recognition and acceptance of social and cultural changes at that stage. On one hand, culture was pioneering and required the guidance of social elites to introduce western-advanced ideas into ancient Chinese cities. On the other hand, culture was socially based, and the spread and influence of modern culture depended on support from ordinary citizens. Only in this way could the transformation of urban appearance occur.

8. Conclusion

Drawing from the principles of urban morphology and spatial politics, our study has curated a distinctive analytical framework, seamlessly integrating historical map restoration techniques to illuminate the multi-faceted layers of Hangzhou's urban evolution during the late 19th and early 20th centuries. Anchoring our analysis in the seminal works of scholars who have navigated the intricate terrains of cities in the global south, particularly amidst the tumultuous tides of colonization, we delineated Hangzhou's transformative patterns into pivotal historical epochs. This was further elucidated through three primary motifs: the realignment of streets, the metamorphosis of public spaces, and the fluidity of urban epicenters. Taking cues from the insights of Bandauko[9] and Bloyce[13], our framework stresses the significance of appreciating the interplay between traditional Chinese urban constructs, Western intrusions, and overarching global south dynamics. This interwoven narrative is essential for comprehensive and nuanced interpretations of Hangzhou's urban tapestry and its shifts.

Central to our observations are the city's dynamic morphological alterations during its modernization. Notably, the restructuring of streets and alleys epitomizes the transition from the historically intricate layouts

of Chinese cities to a more systematic, grid-like configuration. This metamorphosis, we deduce, resonates with China's broader urbanization narrative, accommodating the modern demands of mobility and commerce. Further, our analysis sheds light on significant landmarks like West Lakeside Park, heralding the integration of public recreational spaces into the urban fabric. The razing of city walls symbolically ushered in an era where natural features like the West Lake became intrinsic to the city's identity. Moreover, the palpable shift of the urban epicenter from Qinghefang and Fufu Fang during the Qing Dynasty to the new market by the 1930s encapsulates the city's evolving socio-economic gravitas.

Underpinning these themes, we discern a set of figurational factors of "political-economic-cultural" dynamics that paint a vivid tapestry that reverberates beyond mere urban landscape shifts. Each epoch, from the vestiges of Manchu dominance to the embrace of a burgeoning market economy, not only chronicles Hangzhou's journey but also echoes the challenges and transitions faced by many cities in the global south. While the spatial political backdrop anchored the spatial politics, the economic winds ushered in shifts that were at once transformative and reflective of broader regional transitions. Yet, amidst these tectonic shifts, culture remained the linchpin, capturing an era's ethos where "Westernization" signified progress and reshaped the urban tableau in response to both elite aspirations and the populace's evolving psyche.

To chart a course beyond established pathways and truly appreciate the intricate layers of urban transformations, it's imperative to continually reassess and recalibrate our understanding, drawing inspiration from diverse contexts and methodologies. Such explorations into Hangzhou's urban form transition are pivotal for understanding the urban narratives in cities in the global south. The intricate dynamics observed in Hangzhou offer invaluable lessons, highlighting the importance of contextualizing urban transitions within their unique socio-political and cultural tapestries. This study's findings underscore the need for more granular, context-sensitive analyses in urban morphological research, especially within the rich tapestry of cities in the global south. As we move forward, it is crucial to broaden our gaze, drawing insights from such cities to inform sustainable urban planning and policy formulation on a global scale. Future research endeavors should delve deeper into comparative analysis, rooted in a sound theoretical foundation like the one proposed in this study, which holds the promise of unearthing valuable insights that can guide urban transitions and inform urban planning that honors and preserves local identities and collective memories on a global scale.

Author contributions

Conceptualization, YW and YQ; methodology, YW; software, YW; validation, YW, YQ, and HW; formal analysis, YW; investigation, YW; resources, YQ; data curation, YW; writing—original draft preparation, YW; writing—review and editing, YQ and HW; visualization, YW; supervision, HW; project administration, YW; funding acquisition, HW. All authors have read and agreed to the published version of the manuscript.

Funding

Conflict of interest

The authors declare no conflict of interest.

References

1. Wendel DDB. Introduction: Toward a spatial epistemology of politics. *Spatializing Politics: Essays on Power and Place* 2015.
2. Lara FL. New (sub) urbanism and old inequalities in Brazilian gated communities. *Journal of Urban Design* 2011; 16(3): 369–380. doi: 10.1080/13574809.2011.571160

3. Gururani S, Kennedy L. The co-production of space, politics and subjectivities in India's urban peripheries. *South Asia Multidisciplinary Academic Journal* 2021; 26. doi: 10.4000/samaj.7365

4. Noizet H. Fabrique urbaine: A new concept in urban history and morphology. *Urban Morphology* 2009; 13(1): 55–66. doi: 10.51347/jum.v13i1.3947

5. Minner J. Revealing synergies, tensions, and silences between preservation and planning. *Journal of the American Planning Association* 2016; 82(2): 72–87. doi: 10.1080/01944363.2016.1147976

6. Alonso W. The historic and the structural theories of urban form: Their implications for urban renewal. *Land Economics* 1964; 40(2): 227–231. doi: 10.2307/3144355

7. Rowe C, Slutzky R. Transparency: Literal and phenomenal. *Perspecta* 1963; 8: 45–54. doi: 10.2307/1566901

8. Rapoport A. *Human Aspects of Urban form: Towards a Man—Environment Approach to Urban form and Design.* Pergamon Press; 1977.

9. Bandauko E, Arku G, Nyantakyi-Frimpong H. A systematic review of gated communities and the challenge of urban transformation in African cities. *Journal of Housing and the Built Environment* 2021; 37(1): 339–368. doi: 10.1007/s10901-021-09840-1

10. Kusno A. The post-colonial unconscious: Observing mega-imagistic urban projects in Asia. In: Bharne V (editor). *The Emerging Asian City.* Routledge; 2012. pp. 168–178.

11. Blau E. Urban intermedia: City, archive, narrative. In: Kurgan L, Brawley D (editors). *Ways of knowing cities.* Columbia University Press; 2019. pp. 207–239.

12. Rajagopal B. Locating the Third World in cultural geography. In: *Third World Legal Study.* The Official publication of the International Third World Legal Studies Association; 1999. pp. 1–20.

13. Bloyce D. Research is a messy process: A case study of a figurational sociology approach to conventional issues in social science research methods. *Graduate Journal of Social Science* 2004; 1(1): 144–166.

14. Carolini GY. Valuing possibility: South-south cooperation and participatory budgeting in maputo, mozambique. In: Silva CN (editor). *Urban Planning in Sub-Saharan Africa: Colonial and Postcolonial Planning Cultures.* Routledge; 2015.

15. Pietrostefani E, Holman N. The politics of conservation planning: A comparative study of urban heritage making in the Global North and the Global South. *Progress in Planning* 2021; 152: 100505. doi: 10.1016/j.progress.2020.100505

16. Arribas-Bel D, Fleischmann M. Spatial Signatures—Understanding (urban) spaces through form and function. *Habitat International* 2022; 128: 102641. doi: 10.1016/j.habitatint.2022.102641

17. Batra L. *A Review of Urbanisation and Urban Policy in Post-Independent India.* Centre for the Study of Law and Governance; 2007.

18. Laycock SD, Brown PG, Laycock RG, Day AM. Aligning archive maps and extracting footprints for analysis of historic urban environments. *Computers & Graphics* 2011; 35(2): 242–249. doi: 10.1016/j.cag.2011.01.002

19. Osterhammel J. Semi-colonialism and informal empire in twentieth-century China: Towards a framework of analysis. In: Wolfgang J (editor). *Imperialism and After: Continuities and Discontinuities.* Allen & Unwin; 1986. pp. 290–314.

20. Wang Y. Modernism and its discontent in Shanghai: The dubious agency of the semi-colonized in 1929. In: Goodman B, Goodman D (editors). *Twentieth Century Colonialism and China.* Routledge; 2012. pp. 167–179.

21. Padua M. *Hybrid Modernity: The Public Park in Late 20th Century China.* Routledge; 2020.

22. Whitehand JWR. Conzenian urban morphology and urban landscapes. In: Proceedings of the 6th International Space Syntax Symposium; 12–15 June 2007; Istanbul, Turkey. pp. 12–15.

23. de Oliveira VMA. *Urban Morphology.* Springer International Publishing; 2022.

24. Caniggia G, Maffei GL. *Architectural Composition and Building Typology: Interpreting Basic Building.* Alinea Editrice; 2002.

25. Gu K. Urban morphology of China in the post-socialist age: Towards a framework for analysis. *Urban Design International* 2001; 6: 125–142.

26. Widodo J. Historical morphology of coastal cities in Southeast Asia. In: Padawangi R (editor). *Routledge Handbook of Urbanization in Southeast Asia.* Routledge; 2018. pp. 391–399.

27. Kalia R. Modernism, modernization and post‐colonial India: a reflective essay. *Planning Perspectives* 2006; 21(2): 133–156.

28. Duque JC, Lozano-Gracia N, Patino JE, Restrepo P. Urban form and productivity: What shapes are Latin-American cities? *Environment and Planning B: Urban Analytics and City Science* 2021; 49(1): 131–150. doi: 10.1177/2399808321999309

29. Fleischmann M, Ombretta R, Sergio P. Measuring urban form: Overcoming terminological inconsistencies for a quantitative and comprehensive morphologic analysis of cities. *Environment and Planning B: Urban Analytics and City Science* 2021; 48(8): 2133–2150.

30. Sridhar KS. *Urbanization in the Global South: Perspectives and Challenges.* Routledge India; 2021.

31. Peimani N, Kamalipour H. Assembling transit urban design in the global south: Urban morphology in relation to forms of urbanity and informality in the public space surrounding transit stations. *Urban Science* 2022; 6(1): 18. doi: 10.3390/urbansci6010018

32. de Andrés EÁ, Güell JMF, Smith H. Instruments for analysing urban conflicts in the global south: The case of urban transformation processes in Dakar. *Habitat International* 2015; 49: 187–196. doi: 10.1016/j.habitatint.2015.05.021

33. Myers G. Urbanisation in the global south. In: Shackleton CM, Cilliers SS, Davoren E, du Toit MJ (editors). *Urban Ecology in the Global South*. Springer Cham; 2022. pp. 27–49.

34. Larbi M, Kellett J, Palazzo E. Urban sustainability transitions in the global south: A case study of Curitiba and Accra. *Urban Forum* 2022; 33(2): 223–244. doi: 10.1007/s12132-021-09438-4

35. Harley JB. Deconstructing the map. *Reprinted from Cartographica* 1989; 26(2): 1–20. doi: 10.3138/E635-7827-1757-9T53

36. Edney MH. *Mapping an Empire: The Geographical Construction of British India*, 1765–1843. University of Chicago Press; 1997.

37. Black J. *Maps and Politics*. University of Chicago Press; 2000.

38. Akerman JR, Karrow RW. *Maps: Finding Our Place in the World*. University of Chicago Press; 2007.

39. Hardt J, Nadav N, Brigitta S. Combining historical maps, travel itineraries and least-cost path modelling to reconstruct pre-modern travel routes and locations in Northern Tigray (Ethiopia). *The Cartographic Journal* 2023; 1–17.

40. Harari M. Cities in bad shape: Urban geometry in India. *American Economic Review* 2021; 110(8): 2377–2421.

41. DeBats DA, Gregory IN. Introduction: Historical GIS and the study of urban history. *Social Science History* 2011; 35(4): 455–463. doi:10.1215/01455532-1381814

42. Vaughan L. *Mapping Society: The Spatial Dimensions of Social Cartography*. UCL Press; 2019.

43. Hargett JM. Song dynasty local gazetteers and their place in the history of Difangzhi writing. *Harvard Journal of Asiatic Studies* 1996; 56(2): 405–442. doi: 10.2307/2719404

44. Haw SG. Marco polo: From Hangzhou to Quanzhou. *Asiatische Studien-Études Asiatiques* 2021; 74(3): 485–512. doi: 10.1515/asia-2020-0010

45. Zhang R, Taylor K. Cultural landscape meanings. The case of West Lake, Hangzhou, China. *Landscape Research* 2020; 45(2): 164–178. doi: 10.1080/01426397.2019.1589438

46. Bickers R, Jackson I. Introduction: Law, land and power: Treaty ports and concessions in modern China. In: Bickers R, Jackson I (editors). *Treaty Ports in Modern China*. Routledge; 2016. pp. 1–22.

47. Fu S. Shan-shui myth and history: The locally planned process of combining the ancient city and West Lake in Hangzhou, 1896–1927. *Planning Perspectives* 2016; 31(3): 363–390. doi: 10.1080/02665433.2015.1079795

48. Smith RJ. *The Qing Dynasty and Traditional Chinese Culture*. Rowman & Littlefield Publishers; 2015.

49. Elliott MC. Ethnicity in the qing eight banners. In: Crossley PK, Siu HF, Sutton DS (editors). *Empire at the Margins: Culture, Ethnicity, and Frontier in Early Modern China*. University of California Press; 2006. pp. 27–57.

50. Meyer-Fong T. *Building Culture in Early Qing Yangzhou*. Stanford University Press; 2003.

51. Hosie A. *Manchuria: Its People, Resources and Recent History*. Forgotten Books; 2018.

52. Chapin FS. Activity systems and urban structure: A working schema. *Journal of the American Institute of Planners* 1968; 34(1): 11–18. doi: 10.1080/01944366808977214

53. Duara P. Nationalists among transnationals: Overseas Chinese and the idea of China, 1900–1911. In: Ong A, Nonini DM (editors). *Ungrounded Empires.* Routledge; 1996. pp. 49–60.

54. Tachibana M. The 1911 Revolution and "Mongolia": Independence, constitutional monarchy, or Republic. *Journal of Contemporary East Asia Studies* 2014; 3(1): 69–90. doi: 10.1080/24761028.2014.11869071

55. Fung ESK. *The Military Dimension of the Chinese Revolution: The New Army and Its Role in the Revolution of 1911*. Australian National University Press; 1980.

56. Shulan F, Nishimura Y. Formation of city-lake integrated urban morphology in Hangzhou: A study on the related history starting from the new market plan of the lakefront district in early modern times. *China City Planning Review* 2015; 24(2): 64–73.

57. Bright C, Ho JW. *War and Occupation in China: The Letters of an American Missionary from Hangzhou, 1937–1938*. Lehigh University Press; 2017.

58. Sadeghian MM, Vardanyan Z. A brief review on urban park history, classification and function. *International Journal of Scientific & Technology Research* 2015; 4(11): 120–124.

59. Zhao C. From shikumen to new-style: A rereading of lilong housing in modern Shanghai. *The Journal of Architecture* 2004; 9(1): 49–76. doi: 10.1080/1360236042000197853

60. Baur N, Ernst S. Towards a process-oriented methodology: Modern social science research methods and Norbert Elias's figurational sociology. *The Sociological Review* 2011; 59(s1): 117–139. doi: 10.1111/j.1467-954X.2011.01981.x