

Urban Morphological Changes in Hangzhou from the 1950s to the 1990s

An Approach Integrating Oral History

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Keywords: Hangzhou, Urban Form, Oral History.

Abstract: Systematic interviews to compile an oral history of urban planning since the 1950s were first carried out and led by the China Academy of Urban Planning and Design (Li, 2017), as an extension of research into industrial city planning and construction during the first five-year plan (Li, 2016). Although most current statements about Chinese cities in the 1950s have highlighted prominent socialist features such as studying the Soviet Union, prioritizing industrial development, and solving workers' housing problems (WU, 2015. DING, 2018. HOU, 2018), the oral interviews showed more diverse development and localized paths, including urban planning for non-industrial purposes, non-planned construction by local groups, etc. The city of Hangzhou, which was one of the first cities to receive urban planning direction from Soviet experts and had no national industrial projects constructed during the 1950s, was mentioned repeatedly during the interviews.

However, Hangzhou has not yet been studied for its potential in clarifying the overall nature and development path of China's urban planning since the 1950s. Even though, as interviews show, Hangzhou was chosen to represent urban construction achievements in New China at the UIA congress in Moscow (1958), but its pioneering role in China's urban planning efforts in each period since then was ignored. Based on this new understanding and new materials provided by studying oral history, this paper re-examines the process of morphological changes in Hangzhou from the 1950s to the 1990s, in order to make a case for a better and more complete understanding of the overall characteristics of China's urban modernization transformation, and also to verify the possibility and feasibility of an approach combining oral history with urban morphology studies.

1. Introduction

This study explores the developing path and features of Hangzhou's urban form from the 1950s to the 1990s and proposes a new method to understand the reasons behind the urban form changes. Recently, the research methods applied in urban morphology are mainly the ISUF (International Seminar on Urban Form) traditional methods based on the Conzenian and Muratorian traditions (Pinho and Oliveira, 2009, p. 103). In the study of medieval towns, Conzen explained a method to trace the development of a place by analysing the landscape, including street systems, partition patterns and building types. Urban plans and historical archives that

carry the 'material information' of cities are essential materials in research. However, little work has been done towards an empirical approach to validate archival data in this field (Sanders, 2014, p. 189). Most historical records also only cover significant events or official announcements, excluding those details that affect the urban form indirectly. Therefore, the introduction of new methods may help solve these problems.

In 2012, China Urban Planning and Design Institute approved the establishment of Zou Deci studio, which clearly took urban planning history and theory as the main research direction. One year later, the research of the academician studio turned to the in-depth study of urban planning history during the 'one five-year plan' period. Li Hao, who is a member of the studio, conducted interviews with the administrative cadres, professional technicians and full-time translators who participated in the planning work in the early years and published 'Cities, Planning Activities and Witnesses' series. In the practice of interviews, he realised that interviews with veteran experts and oral history are indispensable works for determining the history of China's urban planning (Li, 2017, p. 5). The study partly included important events and institutional changes in Hangzhou urban planning in the interviews of veteran experts, such as Li Zisong, Bao Haihan, Sun Dongjia and Wang Youzhi, who participated in Hangzhou planning in the last century.

Focus on Hangzhou's urban form appeared mostly within planning academics in the past 5 years. The fourth and fifth chapters of 'The Formation History of Hangzhou Scenic City', which was written by Fu Shulan (2015), mainly collated the previous master plans from 1949 to 2007, analysed the spatial transformation of the lakefront districts on the basis of old maps and interpreted the emerging process to confirm the 'City and Lake integrated' urban form in Hangzhou. Feng Jian (2013) used the theory of fractals when he studied the industrial suburbanisation of Hangzhou from 1949 to 1996. Zhu Qian (2015) used the local history and archives of Hangzhou to examine the urban transformation from the founding of China to the pre-reform period and analysed the reasons for spatial change through the perspectives of urban economy, population and urban planning. Li Yutian (2017) used a combination of graphical comparison and data analysis in his doctoral thesis to study the external contours and internalities of Hangzhou since the reform and opening up. However, Hangzhou still lacks the systematic research of morphological change and the exploration of the causes of morphological changes in the period from the 1950s to the 1990s.

Therefore, this study aims to systematically sort out the urban form changes of Hangzhou from the 1950s to the 1990s and apply a new method, namely, oral history, to explore the causes of morphological characteristics of Hangzhou. With this objective, this study started by collating historical maps, plans and data on road construction, large-scale construction projects from the literature and archives, such as Hangzhou City Yearbook, Hangzhou Urban and Rural Construction Journal. In addition, as the Five-year plan is an integral part of China's national economic policy and is a plan for major national construction projects, productivity distribution and essential proportions of the national economy, this study divided the period from the 1950s to the 1990s into nine periods according to the five-year plan and drew maps for every period. On the basis of these data and charts, this study summarised the urban form characteristics of each stage of Hangzhou and divided the whole process into four stages according to the different morphological features. After determining all the uncertainty issues or contradictory expression, this study then introduced interview method and conducted two interviews with Mr. Bao Haihan to seek the support or correct ideas for the research.

Apart from seeking to define different stages of Hangzhou's urban form development, this study also attempted to combine oral history with the traditional morphological method for an improved and in-depth understanding of the overall characteristics of Hangzhou's urban modernisation transformation and the impetus for the transformation.

Table 1. Construction statistics of Hangzhou from the 1950s to 1990s. Source: Data from Hangzhou Municipal Chronicle.

	Built-up area (km ²)	The length of the road (km)	The number of large-scale construction projects
1949	13.09	307.88	/
1958	/	372.68	27
1965	/	328.96	3
1970	/	351.20	2
1975	/	390.49	0
1980	53	431.33	5
1985	60.7	507.60	8
1990	69.2	571	7
1995	102.2	626	15
2000	177.18	1020	2

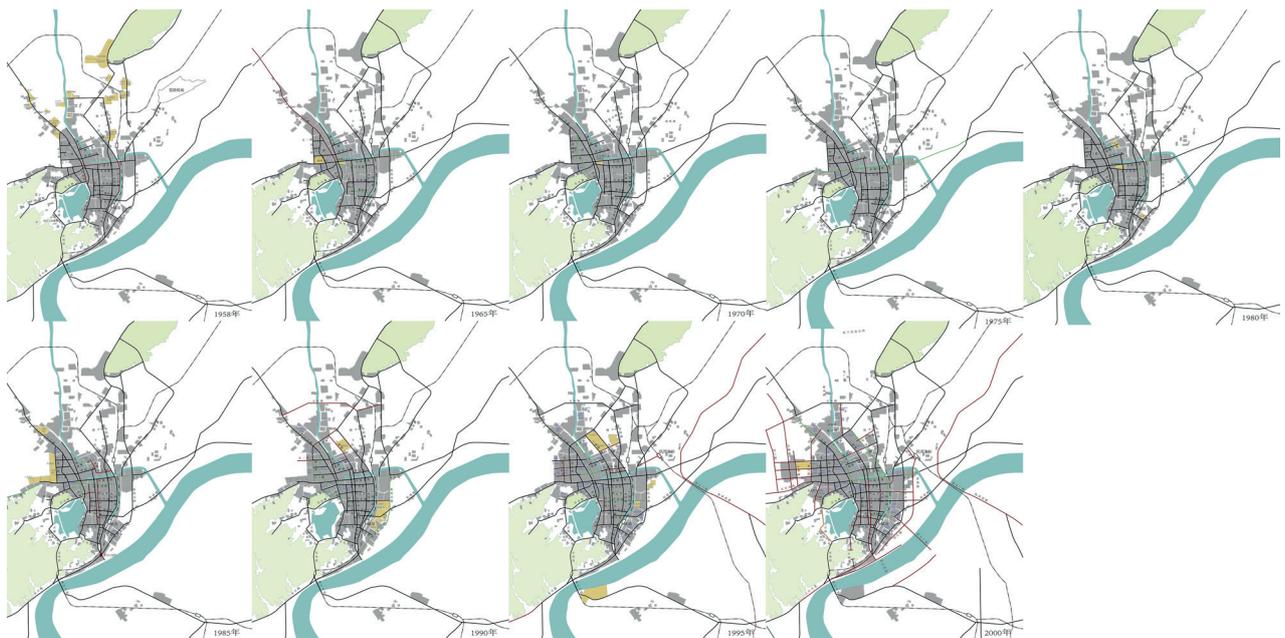


Figure 1. Construction and Urbanisation in Hangzhou (1958–2000). Source: Author's own based on the data from Hangzhou Municipal Chronicle and official maps of Hangzhou City Yearbook.

2. Urban Morphological Changes in Hangzhou from the 1950s to the 1990s

Hangzhou showed different morphological features in different periods from the 1950s to the 1990s. The results show that 1) Hangzhou's spatial form is a circle of expansion with the old city as the core for a long time, and the inner circle is Shangcheng District, Xiacheng District and the western part of Jianggan District, which is mainly dominated by business, administrative and residential functions. The middle circle includes Gongshu District, the northeast of Xihu District, Binjiang District, Jiangnan District and the surrounding areas of Yuhang District, which has comprehensive functions. The outer ring is the industrial zone, which includes Xiaoshan, Yuhang, Linping, Tangqi, Liangzhu, Pingyao and other towns. 2) From 1949 to 1958, the construction and development of Hangzhou developed rapidly and broke the 'east city-west lake' urban structure of Hangzhou, which is a continuation of ancient time and jumping out of the old city that has not changed considerably in a thousand years. In the nearly 20 years since 1959, planning work in Hangzhou stagnated in an all-around way, and the speed of urban morphological change slowed down. Urban construction mainly relied on the inertia of former plans. Construction of public buildings were carried out in the surrounding area of Wulin Square and Zhejiang Exhibition Hall, such as Hangzhou theatre and telecommunications and department store buildings. After 1980, the transformation speed of urban form in Hangzhou accelerated again but was still a horizontal expansion mode. Decentralised clusters appeared in the 1990s. The representative groups were the Xiasha and Yuhang development zones in the east and the sub-centre group in the south with Xiaoshan development zone and Binjiang District as the core.

3. Structure Remodelling Period (1949–1958)

After the foundation of the People's Republic of China in 1949, Hangzhou experienced a rapid remodelling period of urban form. The demolition of the city walls and the construction of the roads around the city have extended Hangzhou's urban development beyond the boundary of Wushan in the south, Wulin in the north, Qiantang River in the east and West Lake in the west. The most apparent change in the map is a leaping growth of the industrial park in the north of the old city. Banshan heavy industrial area, which was dominated by metallurgy and machinery manufacturing industries, formed along the Shanghai–Hangzhou Railway. Oxygen plant group, iron and steel plant, bearing factory, steam turbine plant, textile machinery plant, heavy machinery factory and boiler factory were built in this area in Hangzhou. Along Hangning Road, a Gongchengqiao light industrial area, which was mainly composed of the textile and light industries, was established. On both sides of the canal, Zhejiang hemp textile factory, Hangzhou No. 1 woolen mill and Hangzhou No. 1 silk printing and dyeing plant emerged. Overall, the layout of the industrial zone is in line with the design of the Master Plan completed in 1951.

In terms of road construction, a pattern of ring roads in the old city started forming. In 1951, a separate provincial and municipal traffic administrative agency was established for the first time (China. Hangzhou Traffic Records Editorial Committee, 2003). From 1956 to 1959, Hangzhou successively demolished the east, west and north city walls and built Huancheng East Road, West Road and North Road, which were connected to Hubin Road, Nanshan Road, Wansongling Road and Jiangcheng Road. Thus, the freight from the south bank of Qiantang River can detour past the West Lake scenic area and the old city. As a result, the traffic volume in the central area of the city was decreased. In the inner part of the old city, the renovation of

street pavement and drainage facilities was the main construction work. After reorganisation in early June 1949, the Municipal Works Bureau (renamed as the Construction Bureau in the same year) began to do the road condition survey and formulate plans to transform urban roads and streets. Extensive renovation work was carried out on the road for historical relics, bumpy roads and muddy conditions in rainy days (China, Hangzhou Municipal Government, 1994). In Yan'an Road, a new section from Kaiyuan Street to Jiefang Road was built. Baochu Road, Wulin Road, Jiefang Road, Lingyin Road, Nanshan Road, Kaixuan Road and Shuguang Road were all repaired and hardened. As shown in the picture, the renovated roads of this period were mainly concentrated in the west of the old city. This situation is in line with the main construction layout outside the old city.

Comparing the 1958 map of Hangzhou and two plans, namely, the 1951 Master Plan drafted by the Hangzhou Municipal Construction Bureau and the 1953 Master Plan guided by the Soviet expert A. S. Mochin (A.C.МЫЦЦИИ), shows a large deviation between the actual construction and the two plans. This deviation is caused by the incompatibility between the master plan dominated by Soviet values, methodology and the real situation of Hangzhou.

4. Development without Master Plans (1959–1980)

In 1958, Hangzhou drastically modified its master plan, which was completed in 1953, in accordance with the requirements of Great Leap Forward to reflect the new ultra-Leftism. During this period, the primary purpose of development was industrialisation, whereas other urban functions were belittled. The development of Hangzhou's external traffic centred on industrial construction. Hangning Road, which connected with the old city with light industrial factories, such as Huadong and Minsheng pharmaceutical factories, was widened and rebuilt. Moganshan Road was widened and renamed. As a result, the traffic from Wulin gate was alleviated to the northern part of the city. In the north of the old city, Shixiang Road appeared, which linked Qiutao Road, Dongxin Road and Beijing–Hangzhou Grand Canal. The bus terminal, which was located initially in Hubing District, also moved to Wulin gate during this period to avoid external traffic through the old city. The inner road structure of the old city was further improved. This improvement is mainly reflected in the widening and extension of two east-to-west roads. Jiefang Road was widened in the section from Huixing Road to Changmingsi Lane and extended eastward to Huancheng East Road. Tiyuchang Road was expanded, and the gravel pavement from Huancheng West Road to Yan'an Road was rebuilt into asphalt pavement.

However, the industrial Great Leap Forward led to the unsustainable and unnecessary expansion of urban industries, a waste of land, shortage of housing and basic public services and environmental deterioration. (Zhu, 2014:575). The government ascribed these problems to urban planning. The incorrect directive of 'three years without urban planning' was announced in 1960. In 1968, Hangzhou was caught up in the wave of cultural revolution. The planning bureau was closed down. The implementation of Hangzhou's urban planning fell into a standstill. The main constructions also were to meet the needs of the political movement. The government started the construction of 'Exhibition Hall of Longlive Mao Zedong Thought' (later renamed as 'Zhejiang Exhibition Hall') on a vegetable field in the north of old city to welcome the 20th anniversary of the founding of the People's Republic of China and display the unpublished photos of Mao. The construction of the square, namely, 'Red Sun Square' (later called 'Wulin Square'), started near the exhibition hall. A section of Tiyuchang Road, which ended at Huancheng North Road, was converted into the square due to the two aforementioned pro-

jects. The original traffic function was diverted to Exhibition east and west roads. Moreover, Baochu Road was widened and rebuilt in the west of the old city owing to the development of culture and education area. Another important construction was civil defence projects. The defensive counter-attack on Zhenbao Island was launched in 1969, and the combat readiness became increasingly severe. The central government issued a remarkable document entitled 'Report on Strengthening the Work of National Civil Air Defence'. A climax of mass digging holes to prepare for war, which was a response to Chairman Mao Zedong's call, was observed in the whole city. The city construction gradually turned to the permanent and semi-permanent civil air defence projects. A total of 44 connected tunnels were built in the city. Amongst them, Shangcheng District built tunnels under 11 roads, such as Jiefang Road, Yan'an Road, Ding'an Road, Guohuo Road, Renhe Road, Xiaoying Lane, Laodong Road and Huansha North Road. Xiacheng District constructed tunnels under five roads: Tiyuchang Road, Xiaofeng Road, Haier Lane, Chaoming area and Genshan port channel. Gongshu District constructed tunnels under three roads: Changzhen Road, Gongchenqiao Road and Xixi Road. Jianggan District built four tunnels in Fuxing Road and Wangjiang, Ziyang and Tongjiang areas. Xihu District constructed two tunnels in Baochu Road. The Huansha River was cut off, drained to clean up the silt in the riverbed and filled up to form Huansha Road, which is a main secondary road in Hubin area.

At the same time, Hangzhou became a popular political event venue for foreign guests and an attractive destination for international visitors. The Jianqiao airport expansion project and a high-standard theatre, namely, Hangzhou theatre, were completed at an incredibly fast pace to accommodate US President Richard Nixon's visit to Hangzhou in 1972.

From 1959 to 1980, the chaotic constructions were mainly politically oriented. The urban form has not broken through the pattern of waist drum. However, these constructions have also improved the living environment unintentionally and slowly in infrastructure and residential area constructions.

5. Spreading-type Urban Spatial Expansion (1981–1990)

In 1980, the Hangzhou government established a 16-member urban planning advisory group. The group completed a new round of master plan in November, which was the first state council-approved Master Plan of Hangzhou. In accordance with the principles 'protect the West Lake scenery, create Qianjiang new city, gradually transform the old city, form a complete set of living facilities, adjust the industrial structure and develop satellite towns', this Master Plan focused on urban scale, protecting the West Lake scenic area, controlling the old city and reforming and adjusting the industrial land (Fu, 2015, p. 151). Hangzhou experienced a horizontal expansion period from 1981 to 1990.

The construction activities in this period were mainly the expansion of urban boundaries caused by the construction of residential areas. The new residential area appeared mostly in the edge area of the built-up and the open space in the built-up area. The residential area construction in the north of the old city was all built in the existing road frame. The undeveloped land in the north of Huancheng North Road and the south of Banshan industrial zone built Desheng and Hemu residential areas. The Qingtai overpass located in the middle section of Qingjiang Road appeared to the east of the old city and ended the division between the old city and the eastern part of the city, which was caused by railway and the Tiesha River in the past. The residential area construction in the west of the old city is an extension of the cultural and educational district. Gudang, Cuiyuan, Huayuan, Jiulian and Tianmushan residential areas

were built along Wenyi West Road and Jiaogong Road. Hanghui Road, which was from Lin'an City, was widened and renamed as Xixi Road. The road construction lagged behind the real estate development because the west of the city was a residential area developed by real-estate developers.

The speed of regional development to the east of the old city increased significantly during this period. The construction of Xiasha Highway and Qianjiang Second Bridge and the widening of Genshan Road and Qiutao Road provided favourable conditions for the eastward development of the city. Residential areas, such as Xinglong, Tangmiao, Xizhao and Zhanongkou, were built on undeveloped urban plots that lie between Huancheng East Road and Qiutao North Road. The urban pattern has changed from the development of 'back the Qiantang River' to the development 'along the Qiantang River'. However, the speed of growth slowed down for the west of the old city, and the north-south roads, such as Jiaogong Road and Baochu Road, were rebuilt. Wenyi Road was broadened and extended to Nongguanhe Bridge in the west. Hangzhou middle ring road also began to form. The newly widened Qiutao Road, along with the newly built Dagan Road and the existing Jiaogong Road, allowed transit vehicles to bypass the city. In the north of the old city, new Shixiang Road and Dagan Road got connected to Shiqiao Road, Shenban Road and Moganshan Road in the north of the city.

Construction of large-scale infrastructures drove the change in urban interior form. The Zhongdong River Renovation Project appeared on the map. The project started from Zhonghe road overpass in the north and reached Fengshan Road in the south and had a total length of 5.3 km. The Provincial Merchant Training Centre, the business office of the Provincial Construction Bank, the service centre of the Forest Department, the Commercial Building, the Textile Exhibition and Sales Centre, the Supply and Marketing Trade Building, the building of the Provincial People's Bank, the Power Building, the business building of the Provincial Industrial and Commercial Bank and the cinema and theatre were arranged along the street, which made Zhonghe Road the main north-south traffic artery in the old city.

During this period, urban construction developed rapidly, the old developing pattern of urban around West Lake was shaken and the city began to turn to develop along the Qiantang River.

6. Multi-cluster Development (1991–2000)

In 1992, the group completed the supplemental draft of the city planning on May 13 and reported to the provincial government. This revision proposed five 'optimisations' about the urban system, the layout of industrial and residential areas, land use structure and urban ecological environment and infrastructure.

In this period, the most apparent change in urban form was the emergence of multi-cluster developing mode. In the east of the city, Binjiang high-tech industrial development zone and Qianjiang investment zone appeared on the map. In 1996, Xixing, Changhe and Puyan towns of Xiaoshan were included into Hangzhou City, which is called Binjiang District. Hangzhou carried out several road constructions in the east of the city, including the widening of Zhijiang Road (1996), reconstruction of Fuxing Road (1996), broadening of Qingtai Street (1996), construction of Qianjiang Third Bridge (1996), Qianjiang Road Phase I (1998) and Qianjiang Sixth Bridge (1999). Accompanied by road construction, residential areas in the east side of the city, such as the Jingfang, Caihe and Shuangling residential areas, began to take shape. The west part of the city still held a horizontal expansion mode. On the basis of the original grid road of the cultural and educational district, the city's west side extended to the west and north. Wenyi

Road, Wen'er Road and Wensan Road extended west to Hangsan Road. Tianmushan Road was hardened and widened from Jiaosi Road to the west, extending through Gudang Bay to Liuxia Town. These four roads formed the main east–west roads in the west of the city. In terms of the south to north direction, Hangsan Road, Gudun Road, Fengtan Road and Jiaosi Road appeared, constituting the main south–north roads in the west of the city, which had the existing Xueyuan Road and Jiaogong Road. Farmland, surrounded by the four main traffic arteries, namely, Wenyi Road, Tianmushan Road, Hangsan Road and Jiaosi Road, was rapidly filled up. The residential areas of Gudang, Cuiyuan, Huayuan and others appeared, thereby forming a cluster of residential areas to the west of the original parish.

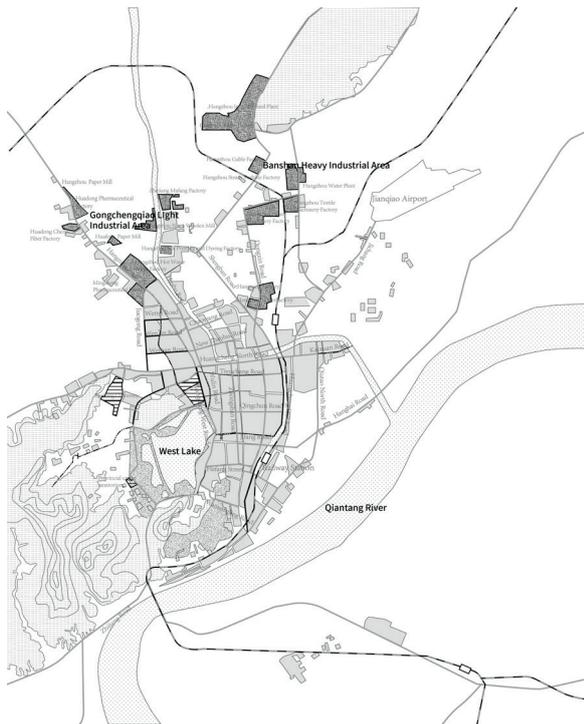
The construction of external roads developed rapidly during this period. In terms of railway, the Anhui–Hangzhou line was completed in 1991, and the Hangzhou–Shanghai railway was completed in 1992. The Hangzhou East railway station also appeared in the east of Jianggan District. In terms of highways, the construction of the Hangzhou Ring Expressway and the Hangzhou–Ningbo Expressway and the reconstruction of the Lin'an section of the Hangyu Expressway were completed in 1992. The Xiaoshan section of Hangjin Highway was rebuilt in the same year.

The map shows that the city of Hangzhou developed rapidly in the east and west directions from 1991 to 2000. At the same time, the construction in the north of the city slowed down. This event was contrary to the construction policy of strictly controlling the city's development to the west. Nevertheless, the development changed Hangzhou from being long in the north–south direction and narrow in the east–west direction to being narrow in the north–south direction and long in the east–west direction.

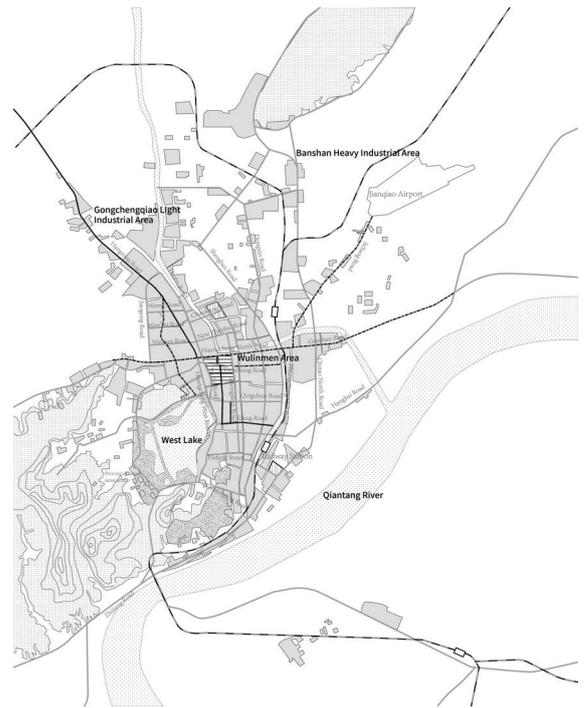
7. Interviews and Intercession

In the preparation phase of the study, the first-generation planners who participated in the planning work of Hangzhou in the last century were contacted to find potential interviewees. Mr. Bao belonged to the first batches of students who participated in the professional planning courses in China. After graduating from Tsinghua University in August 1953, he was assigned to the military construction department in Beijing. In 1956, he transferred to Qinghai. After two years of working as a planner in the provincial urban construction bureau, he came to Zhejiang in 1958 and then entered the planning institute of Hangzhou in 1964. After his retirement in 1996, he was re-employed by the government as a consultant for Hangzhou's planning and worked until 2007. During his 43-year career in Hangzhou, he participated in the compilation of the 1983 master plan, the 1996 master plan, the 2001 master plan and the revision of the master plans in 1964 and 1985. He also played a leading role in the planning of the functional layout and development direction of Hangzhou. His familiarity with Hangzhou for the period of 1949–2000, which is the scope of the current study, is rare. Taking all these factors into account, we believe that Mr. Bao is an ideal interviewee.

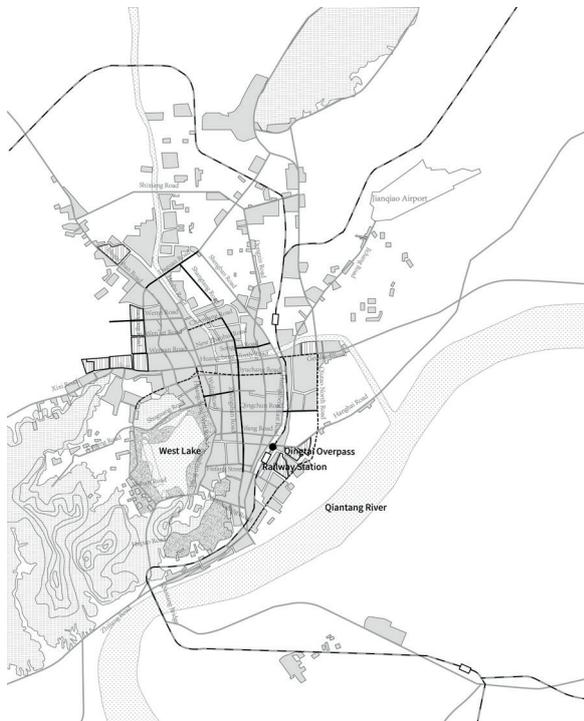
In the current work, two interviews were conducted. In the preparation stage, a list of questions was formulated on the basis of a literature review and historical map drawing. The questions centred on the construction of the industrial city in the 1950s, the road construction after the 1960s, the formation of the cultural and educational area and residential areas in the 1970s and the large-scale projects of Hangzhou. However, the first interview had limited effect on the lack of continuous guidance in interviews and the ambiguity of the questions. After the adjustment of the questioning method and the preparation of a relatively detailed list of questions,



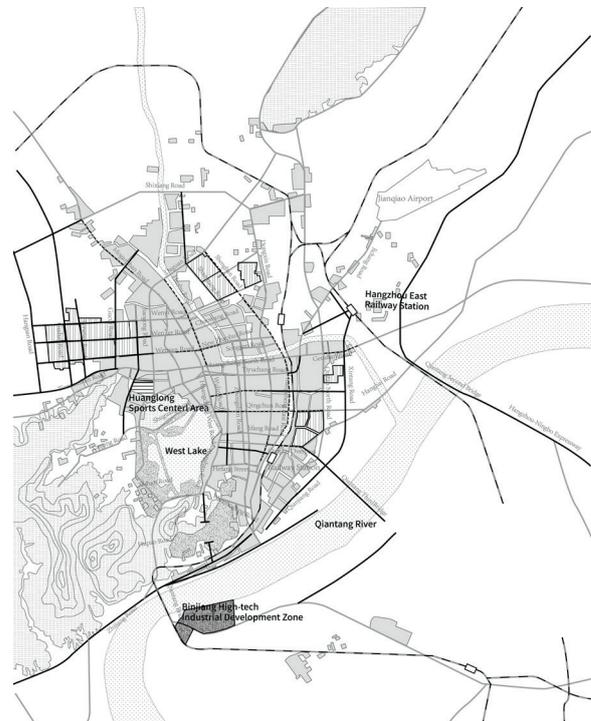
a Construction and Urbanisation in Hangzhou (1949-1958)



b Construction and Urbanisation in Hangzhou (1959-1980)



c Construction and Urbanisation in Hangzhou (1981-1990)



d Construction and Urbanisation in Hangzhou (1991-2000)

Figure 2. Construction and Urbanisation in Hangzhou (2000). Source: Author's own illustration based on official maps of Hangzhou City.

the second interview was held a month, focusing on impressive and detailed historical events or the events in which Mr. Bao was involved. In this way, Mr. Bao could easily recall his experience and find inspiration for his narrative. The recording of the interviews and Mr. Bao's notes were later arranged into a manuscript. Literature materials were searched for verification of the content proposed by Mr. Bao. After these steps, the historical maps were proofread.

8. Supplement and revision of research viewpoints based on the interviews

The oral history method was helpful in advancing the research results. Primarily, it supplemented the unwritten and unrecorded knowledge. In the interview, Mr. Bao expounded the reasons for the failure of the Soviet expert-led plan. In 1953, Hangzhou's first city master plan was led by Soviet urban planner A. S. Mochin (A.C. MYЦИH). However, its implementation was somewhat anticlimactic. In the interview, Mr. Bao also talked about this problem.

Mr. Bao: The plan led by the Soviet expert in 1953 put some sanitariums in Hangzhou. However, not much sanatoriums were built as planned, and nothing else was built in the city according to his plan. The plan stalled due to the lack of funding. At that time, Hangzhou was at the front line of the war. The national government did not invest much in Hangzhou. Thus, no matter how beautiful the Soviet expert's plan was, Hangzhou could not afford to implement it.

After the interview, other research was reviewed. Another expert, Zhang Youliang, who participated in Xi 'an, Luoyang, and other cities' urban planning and design work in the first five-year period mentioned:

They established their country earlier than us, and they have more mature experience than us in terms of disciplined construction and practice. But they have their specific conditions. The ring network plus the radiation mode did not necessarily work in China.

访谈问题

一、杭州第二轮规划决定城市性质为以重工业为基础的综合性工业城市，那个时候建了很多工业区，您对此有什么看法。

例如，七十年代建设了湖墅路北丝绸纺织工业区、半山重工业区、城东蔬菜保护区及食品工业区等。

二、杭州1964年以后道路建设的有关情况。

例如1973年天目山路-环城北路-大森路（今艮山西路）贯通，1981年体育场路拓宽，1982年凤起路建设，1998年环城北路、天目山路、绍兴路拓宽等。

三、您对中东河综合整治工程有关情况的了解及其对杭州其他区域发展的影响。有无另外的大型工程对杭州的发展有巨大的影响。

四、您对杭州城市改革开放以后大量建设现代住宅区有关情况的认识和评价。

例如，1978年朝晖小区开始建设，1982年中河路改造居民搬迁催生了和睦、石板桥、朝晖六区、古荡这些住宅区，1983年翠苑开始建设等。

五、杭州文教区的变迁和重要高校的建设情况。

原来浙江大学、工商大学、财经学院、杭州师范学院、计量学院、丝绸工学院、学军中学、学军小学、文一街小学、十三中、浙大附中这些学校都在文教区，后来又搬迁出来了，2000年杭州建设了下沙高教园区，您对此有什么看法？

六、杭州城市八十年代向北发展，九十年代向南发展，后来城西也快速发展。您对杭州发展方向变化的看法。

七、您参与工作期间，杭州规划管理部门经历了好几次变迁。您对这些变化有什么认识？以及这些变更对规划的制订和实施有哪些影响。

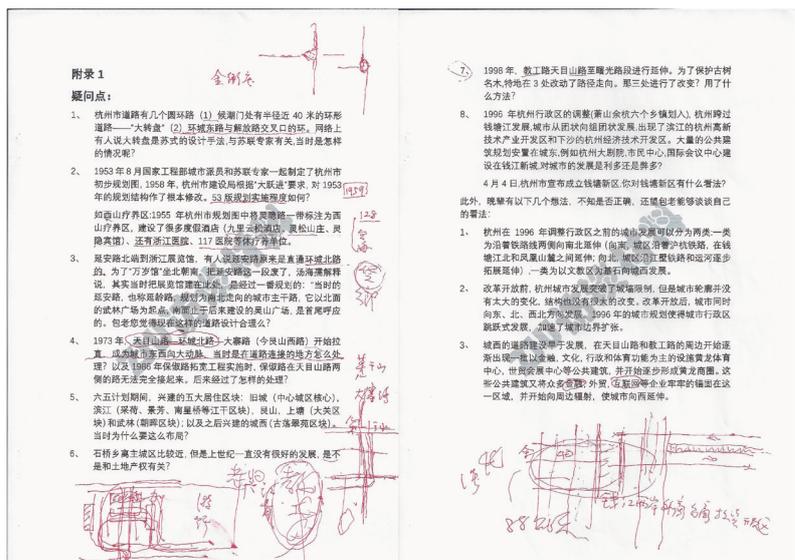


Figure 3. Outline of the First and Second Interviews. Source: Author's own. The handwriting is that of Mr. Bao.

Therefore, even though the 1953 plan had its special status in the history of Hangzhou, the specific construction content was not implemented actively because of two factors: the significant difference between the plan and reality and the lack of funds.

The interviews also shed light on the concept of Hangzhou's political and cultural centre layout, which differed from the form in the plan. The 1980 map shows the new political and cultural centre of the city in the area of the Zhejiang Exhibition Hall which lies south of Huancheng North Road; this location is different from those specified in the 1951, 1964 and 1973 master plans. In the 1951 plan, the political and cultural centre is situated in the north of Huangcheng North Road. In the 1964 and 1973 plans, it is along the West Lake. In the interview, Mr. Bao described the changes in the plan of the political and cultural centre.

Mr. Bao: At that time, deciding how to locate the exhibition hall became problematic. In addition to the exhibition hall itself, we had to consider the flow of the procession. The parade was expected to pass through the exhibition hall, where a reviewing stand would be available. Later on, we decided to locate it in the north to south direction. In front of the hall was the square which had a channel on both sides. There was also a Red Sun Square for the annual National Day and Labour Day Parade.

Given its special political role in history, together with the consideration of people's parade route, the political and cultural centre of Hangzhou was established in the inner part of the old city instead of in the north part of the old city as planned. The interviews enabled us to verify and correct the previous research results. In the previous literature review, we speculated that the decision to control the development to the west in the 1990s was related to the plan for Hangzhou to become an essential central city in the Yangtze River Delta and develop along the Yangtze River. In the interview, Mr. Bao addressed the speculation.

Mr. Bao: When we were preparing the 1993 master plan and the 1996 master plan, we submitted a report to the municipal government: the city should strictly control the development to the west. There were two main places for strict control. One was west of the Gudang area. Why? Mainly because of traffic problems. Mountains dominated the west of the city. The traffic all relied on Wenyi Road, Wen'er Road and Wensan Road. At that time, the three roads were set to be the secondary road measuring 30m wide. Thus, developing to the west was tough. Another reason was the position of the West Lake. If the western part of the city developed, the West Lake could not be called the West Lake anymore for it would be surrounded by built-up areas. The original feature of Hangzhou of being a half-city and half-lake would be destroyed. Hence, in our report, we stated, 'strictly control the development to the west'.

As for the reason why Hangzhou still underwent development to the west, Mr. Bao offered the following explanation:

Mr. Bao: After the reform and opening-up, the Yuhang government had already sold land to real estate developers. Many places in the Jiangcun area had already been sold. These places were included in the scope of Hangzhou. The merchants had built many houses in these areas with nearly no infrastructure construction and with little road construction. Thus, after the Hangzhou government took over these areas, they had to extend and renovate roads and pay for infrastructure construction.

As indicated in the interview, the recommended strict control of the city's development to the west was the result of the government's comprehensive consideration of urban development conditions, such as transportation and urban infrastructure construction. The rapid growth of the west later was because the county government still having the right to sell land. Under market

conditions, real estate developers purchased property for the county-level government. Therefore, the residential areas were built earlier than roads in the west. From this point of view, we can say that the urban form is not strictly determined by planning activities. In the context of the reform and opening-up, market-oriented behaviour is also regarded as a critical factor affecting urban form. The interviews provided mutual evidence of existing views. In the interview, Mr. Bao did not explicitly propose the stage of the urban form change, but he indeed described 1958 and 1980 as two critical nodes in the shift of Hangzhou's form.

Mr. Bao: I was in the city construction office in June 1958. At that time, the 'Great Leap Forward' did not provide any help for the city. The department did not directly engage in planning, and the personnel was gradually transferred... The formal planning after the Cultural Revolution began in 1980. Back then, the Planning Bureau was directly under the Municipal Construction Committee, and the overall planning work was instantly arrested by Wu Chengyu, the deputy director of the Municipal Construction Committee.

To some extent, Mr. Bao's remarks can prove the accuracy of the stage division of the morphological changes in Hangzhou in the former research. The political movements that began in 1958, such as the Great Leap Forward and the Cultural Revolution, lasted for nearly 20 years. In addition, 'three years of no planning' was proposed in 1960. Therefore, on the basis of the literature and interviews, we can regard 1958 as a turning point in the change of the urban form of Hangzhou. However, many scholars believe that the second turning point of urban form change was in 1978 because this period marked the end of the Cultural Revolution. In the interview, Mr. Bao chose the year 1980 as the juncture because it marked the official resumption of the planning works after the Cultural Revolution in Hangzhou. Such description is consistent with the conclusions of the previous literature.

The interviews also brought new inspiration for research. When talking about the construction of the line comprising Tianmushan Road–Huancheng North Road–Dazhai Road (later named as Genshan West Road), Mr. Bao shared a story of public participation.

Mr. Bao: Dazhai Road was originally a temporary road for construction. At that time, there was a vast farmland in the east. Every day at four o'clock in the morning, the peasants from the Pengyu and Jianqiao areas would pull vegetables into the city in wire carts through Dazhai Road. After the construction was completed, Dazhai road was left unattended. When it rained, this road became muddy, and the peasants could not easily pull the carts. Later on, the people in the peasants' commune asked me for help because I was in the construction bureau at that time. I reported their concern to the government which then subsidised 100,000 yuan to repair the road.

This action can be regarded as an early attempt on public participation in urban planning.

9. Four stages of Hangzhou's urban form development based on literature research and oral history method

By integrating the results of the literature research and interviews, we divide the urban form development of Hangzhou from the 1950s to the 1990s into four stages.

The period of 1949-1958 involved the structural remodelling of urban space after the founding of Hangzhou. The main reason for the evolution of Hangzhou's form during this decade was the development of social economy and the advancement of technology that led to new functions in the city. This situation caused conflicts between urban form and urban

function, thus promoting the evolution of urban form. As the plan emphasised the positioning of industrial cities in Hangzhou, industrial expansion was the most crucial cause of urban form change. Consequently, a leap-forward industrial zone emerged in the north of the city, thereby driving the city's north–south road development. The construction of the cultural and educational districts in the city's western area and the construction of rest and recuperation facilities were another two important reasons for the change of urban form during this period. The development of cultural and educational districts broke the historical urban structure of Hangzhou as the 'City in the East, Lake in the West'. Modern grid-like roads appeared in the west of the city. The construction of the rest and recuperation facilities was the only part of the 1953 plan formulated by the Soviet experts to be actually implemented. Resort areas were built in the mountainous areas of the west bank of the West Lake and in the Fenghuang Mountain and Yuhuang Mountain areas.

Between 1959 and 1980, the main change in urban form was reflected in the improvement of the facilities in existing structures. The political movements were the most important reason behind the change in urban form. During this period, the speed of urban construction in Hangzhou slowed down. The most apparent change was the construction of critical public buildings in the Wulin area which gradually developed into an important cultural and commercial centre within the urban area of Hangzhou. The outline of the city had not been further expanded, and the construction of the residential regions brought about by population pressure was arranged in the open space within and along the edges of the old city.

After 1980, under the background of rapid economic development and the formal restoration of planning works, the reconstruction of the urban form was accelerated. The adjustment of the administrative districts and the expansion of the residential areas became two carriages that drove the rapid development of the contours of Hangzhou. In the north and west directions of the existing urban built-up area, a circle-level expansion was initiated, and the east of the city showed a leap-forward development. In the late 1980s, the speed of residential construction began to accelerate. The construction of large-scale residential areas, such as Jiulian, Gudang and Cuiyuan in the west of the city; the Chaohui area along the canal block; and the Caihe area in the east of the city further expanded the urban built-up area. The construction of the residential area in the northern part of the city filled the open space between the Chengbei Industrial Zone and the old city. The development of the west of the city extended the outline of the urban built-up area to the west and close to the Yuhang County area.

After 1990, group developments were scattered outside the old city of Hangzhou. The three districts of Xiaoshan were integrated with Hangzhou, and the Binjiang District was established in the south of the Qiantang River. The focus of urban development shifted from the West Lake to the Qiantang River. In the old city, rapid modernisation and construction began. The old city reconstruction project rebuilt the internal roads of the city. The consciously centralised arrangement of public buildings and critical commercial facilities led to the emergence of two notable business districts, namely, Wulin Square and Wushan Square. Functional structure differentiation began to appear within the old city.

10. Conclusion

The study systematically investigates the development of Hangzhou's urban form from the 1950s to the 1990s and explores the causes of the morphological changes through a wide range of doc-

umentation, such as the Hangzhou City Yearbook, Hangzhou Urban and Rural Construction Journal and Hangzhou Municipal Chronicle, together with the oral history method.

Overall, the development of Hangzhou's urban form from the 1950s to the 1990s can be divided into four stages. From 1949 to 1958, Hangzhou experienced a magnificent industrial construction period, and the urban form broke through the original city's boundary as a result of the urgent need to develop the industry and restore the economy. From 1959 to the Cultural Revolution, the construction slowed down because of the political movements and stagnation of planning works. Important public service facilities appeared on maps for political need. In the 1980s, after the recovery of the planning works, Hangzhou restarted its repaid transformation of its urban form through a spreading-type expansion with the help of the reform and opening-up and the market economy. In the last decade of the 20th century, the urban form evolution accelerated with an adjustment of administrative divisions to include Xiaoshan District and Yuhang District into Hangzhou. The multi-cluster development mode arose in this period.

The attempt to introduce oral history to the research reveals that the oral history method can overcome the limitation of traditional historical records and supplement case records in addition to the statistical data. Oral history can also be mutually verified and supplemented with existing historical data to improve the comprehensiveness and accuracy of the research. As for the methodology, the following aspects deserve special attention. 1) In the selection of interviewees, the purpose of the study and the candidates' experiences and memory ability should be taken into consideration. 2) The pre-interview preparations are of great significance. Before the interview, the interrogative points should be listed after the elaboration of a wide range of documentation and historical maps. We should emphasise that inadequate literature may result in limited inspirations for interviewees. 3) During the interview, guidance for the interviewees is necessary. However, the content should not be framed strictly. 4) Timely supplementary interviews with an adjusted interview outline should be conducted if the former one fails to achieve the desired results.

11. Acknowledgements

We thank Mr. Bao Haihan for providing a valuable interview. This work was supported by the National Key R & D Program of China (Grant No. 2017YFC0702504).

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