



Politecnico di Milano
Faculty of Architecture and Society
Master of Science in Urban Planning and Policy Design
Final Thesis

The Walk-trip City

Wuchang Historical Area, Wuhan, China

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2011.12

Abstract

China's economic achievement is remarkable. However, with this process, Chinese historical cities are facing "disasters" in that the current Chinese urban planning and design approaches are too economic outcome oriented and too rigid. Cities of diversities are treated in the same way like machines. Spatial qualities relating to people's daily life are declining because of this attitude. Moreover, Chinese cities are losing their identities. Thousands of historical buildings and sites are destroyed and replaced by modern commercial investments with similar styles. Wuchang historical area is one of the places with rich natural and cultural resources and is in the process of "destruction", under dramatic changes. It would be transformed by the same approach of Chinese urban planning and design like many other places without considering the diversified features of micro spaces and spatial patterns, which will lead to another meaningless place upon what used to be interesting homes of people. This paper, therefore, with a view quite opposite from current approaches, proposes another way to look at cities and spaces by giving more importance to the spatial pattern features and their contexts, upon which interventions of different types will be invented to make the space and the city more coherent, interesting and, in particular, more like our own cities.

Keywords

Wuchang Historical Area; Space; Spatial Patterns; Urban Planning and Design in China; A Walk-trip City

Intesi

Lo sviluppo economico della Cina è notevole. Tuttavia, con questo processo, le città storiche cinesi sono in via di "disastri", in quanto la pianificazione urbana attuale cinese è troppo economicamente orientata e troppo rigida. Le città delle diversità sono trattate nello stesso modo come macchine. La qualità spaziale relative alla vita quotidiana delle persone è in declino a causa di questo atteggiamento. Inoltre, le città cinesi stanno perdendo le loro identità. Migliaia di edifici storici e siti vengono distrutti e sostituiti dai investimenti moderni commerciali con gli stili simili. La zona storica di Wuchang è uno dei luoghi con le ricche risorse naturali e culturali ed è nel processo di "distruzione", in conseguenza dei cambiamenti drammatici. Sarebbe trasformato dallo stesso approccio della pianificazione urbana e design cinese, come molti altri luoghi senza considerare le caratteristiche diversificate di spazio micro e i modelli spaziali, che lo porterà a un altro luogo senza senso su quello che era la casa interessante della gente. Questa tesi, dunque, in vista diametralmente opposto dagli approcci attuali, propone un altro modo di guardare la città e gli spazi, dando più importanza ai modelli diversi spaziali e loro contesti, su cui gli interventi di tipi diversi saranno inventati per rendere lo spazio e la città più coerente, interessante e, in particolare, più simile alla nostra città.

Parole Chiavi

La zona storica di Wuchang; Spazio; I Modelli di Spazi; Urbanistica e Design in Cina; Una Città da Camminare

Acknowledgement

First and foremost, I would like to express my sincere gratitude from the bottom of my heart to my supervisors, Professor Patrizia Gabellini and la Signorina Fini Giulia. They are full of passion and knowledge of cities, urban planning and design even though I am working on a totally different place from their countries. With their instruction, I made a good work and have developed a lot in ideas. They also gave much help and convenience just to make sure I work comfortably and happily. I really appreciate it.

Then I would like to give my thanks to Politecnico di Milano and the department of Urban Planning and Policy Design for giving so many things in the past two and half years. I met many excellent teachers and learned many new things in their lessons. Thanks to this place, I have improved a lot not only in my professional field but also in my personality. Indeed, I am grateful to all of these.

Finally but not least, I must also thank my family, my dear friends both Chinese and international. I had good times and bad times in the process of work. When I am in good times, they gave me inspirations. When I feel down, they gave me courage and energy. You are really kind.

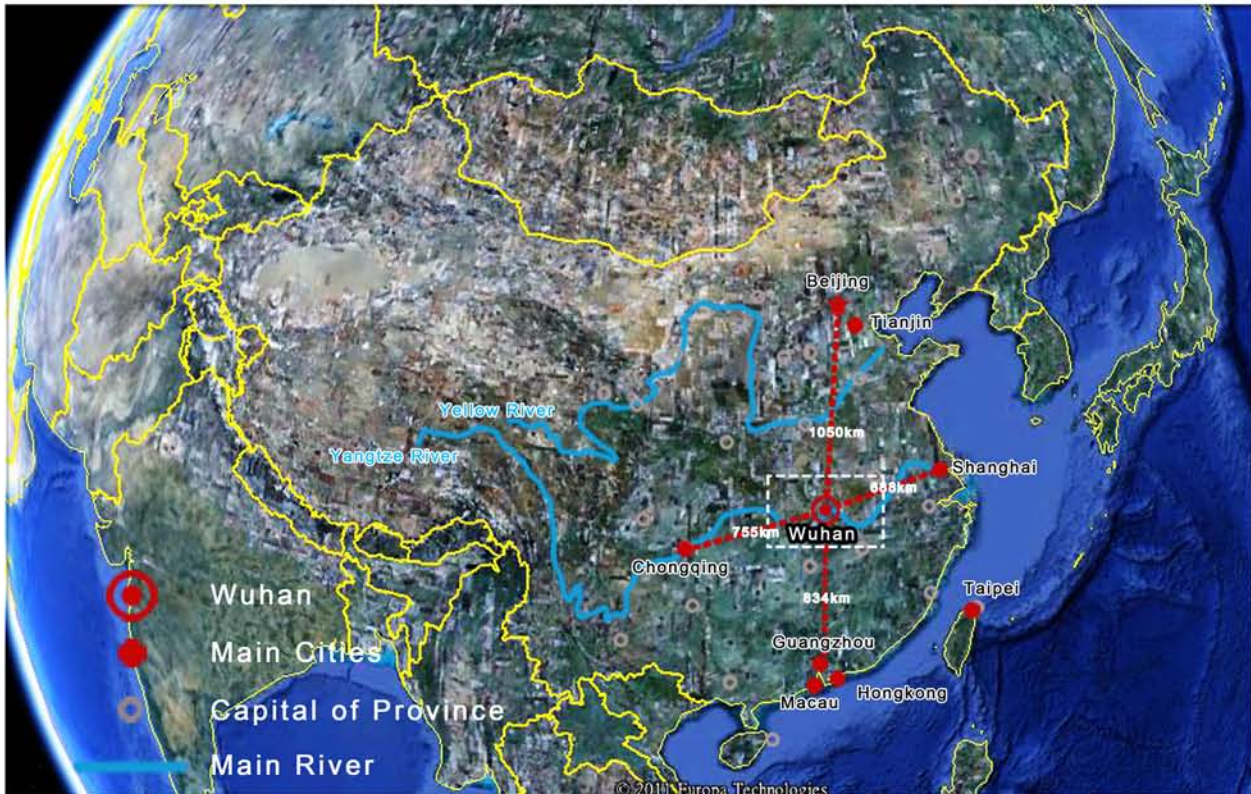
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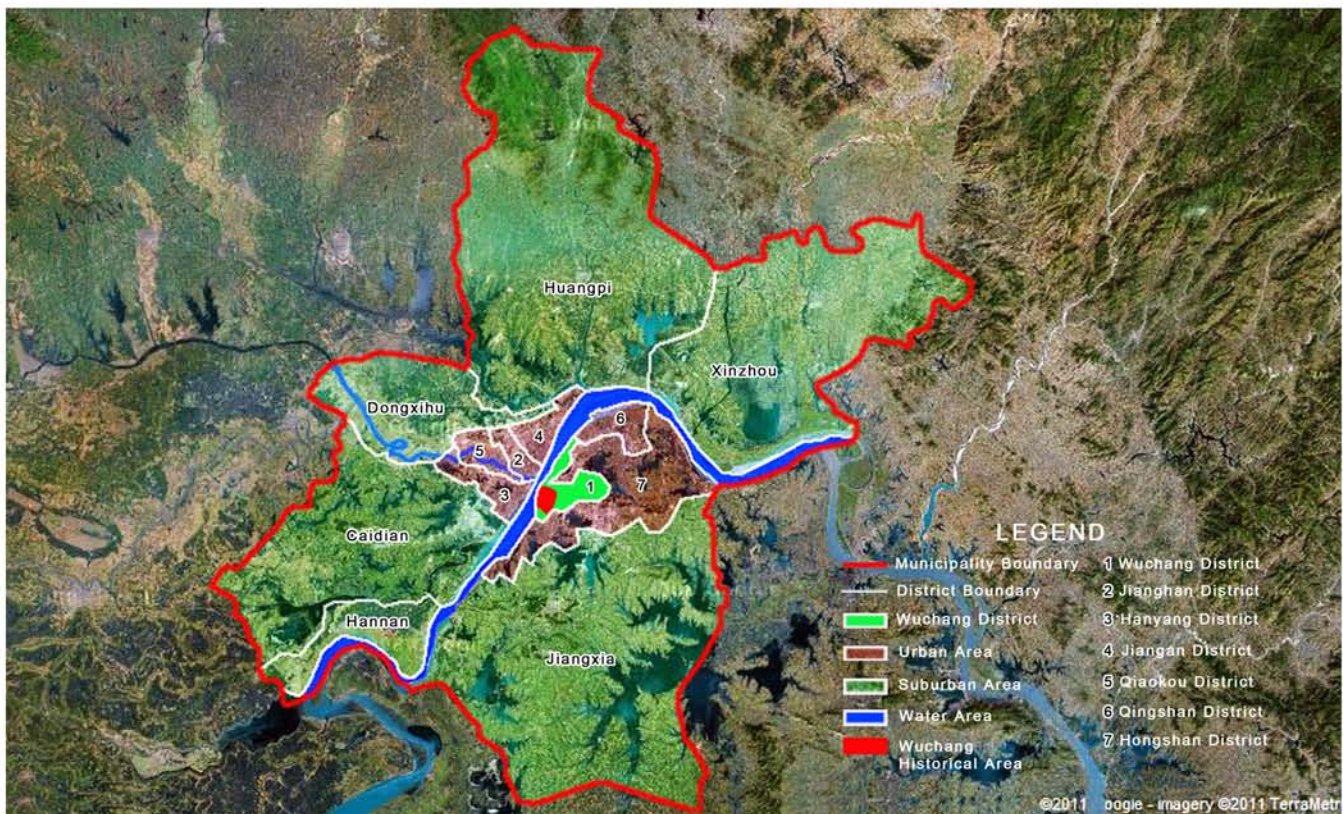
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Bibliography

Site Location



Location of the City of Wuhan



Location of Wuchang Historical Area in Wuhan

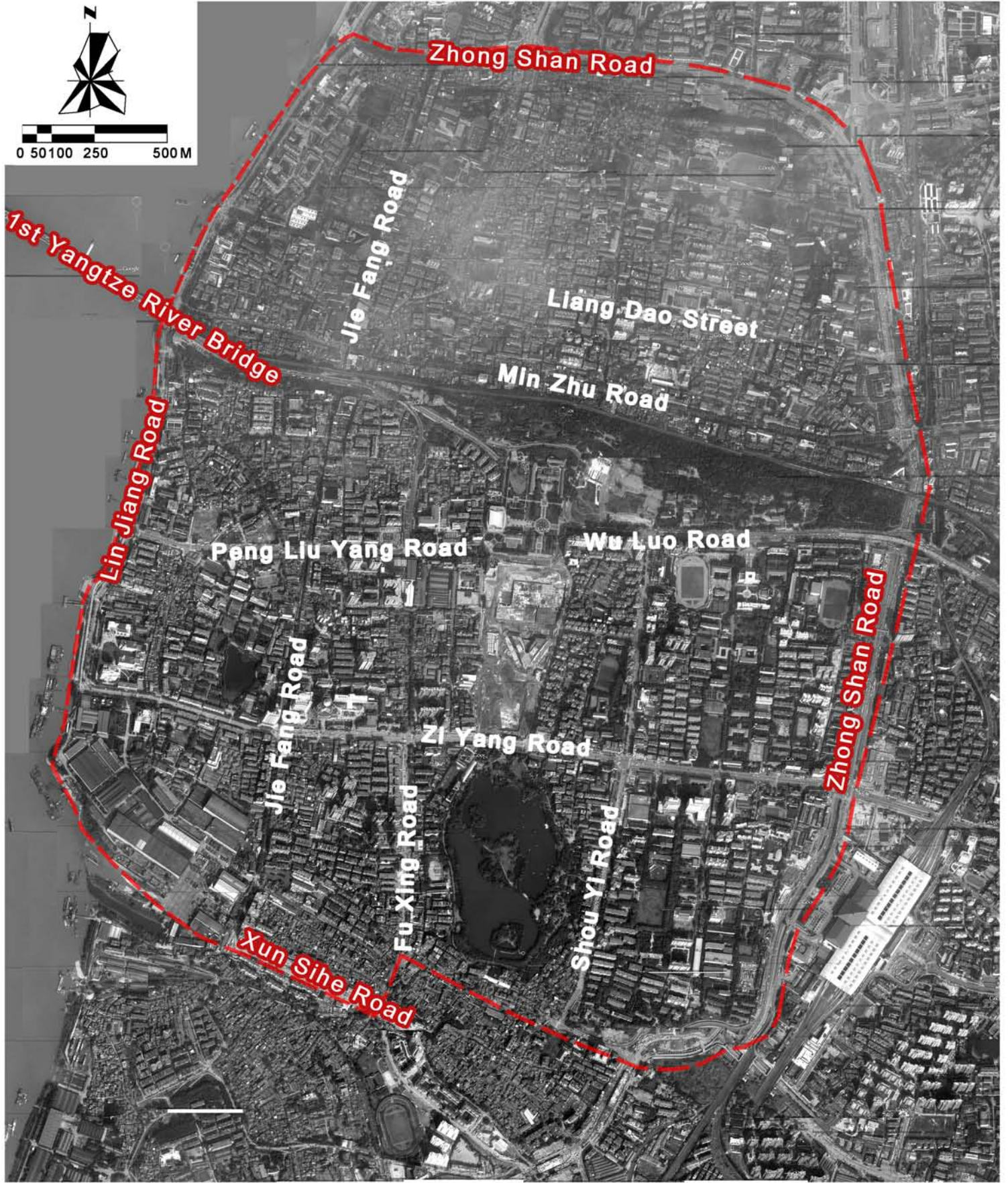
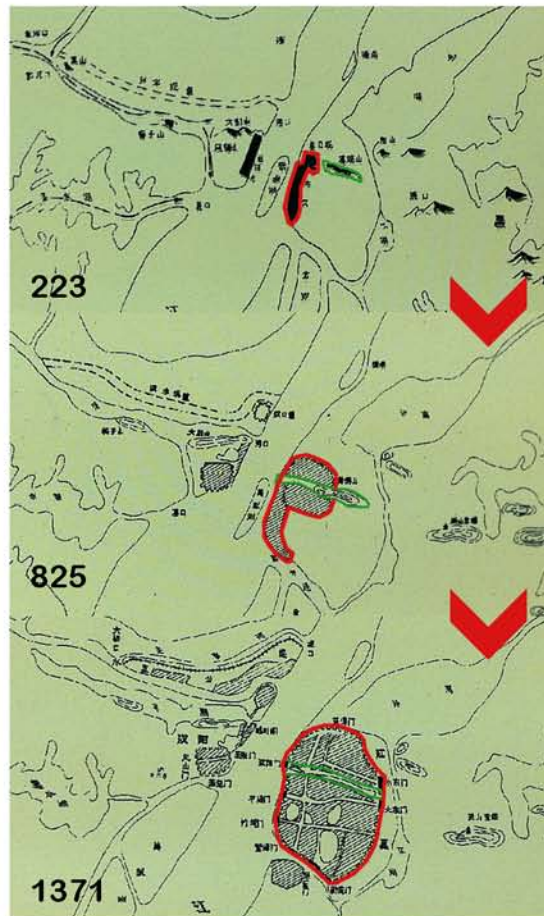
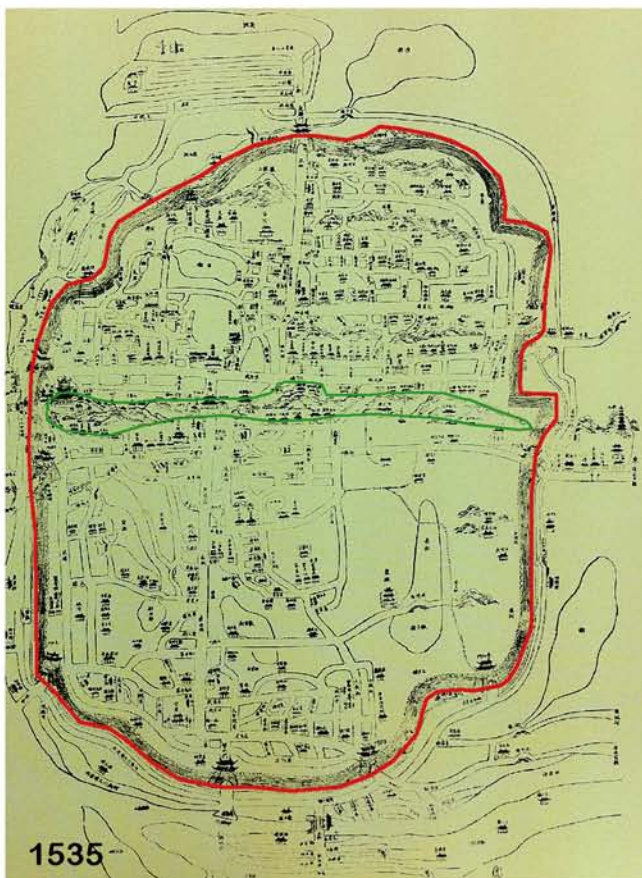


Figure 1 Wuchang Historical Area

Spatial Evolution

223 A.D.-1949



— Snake Mountain — City Wall

THE CENTRAL POINT OF THE CHINESE REBELLION.



Group figure 2

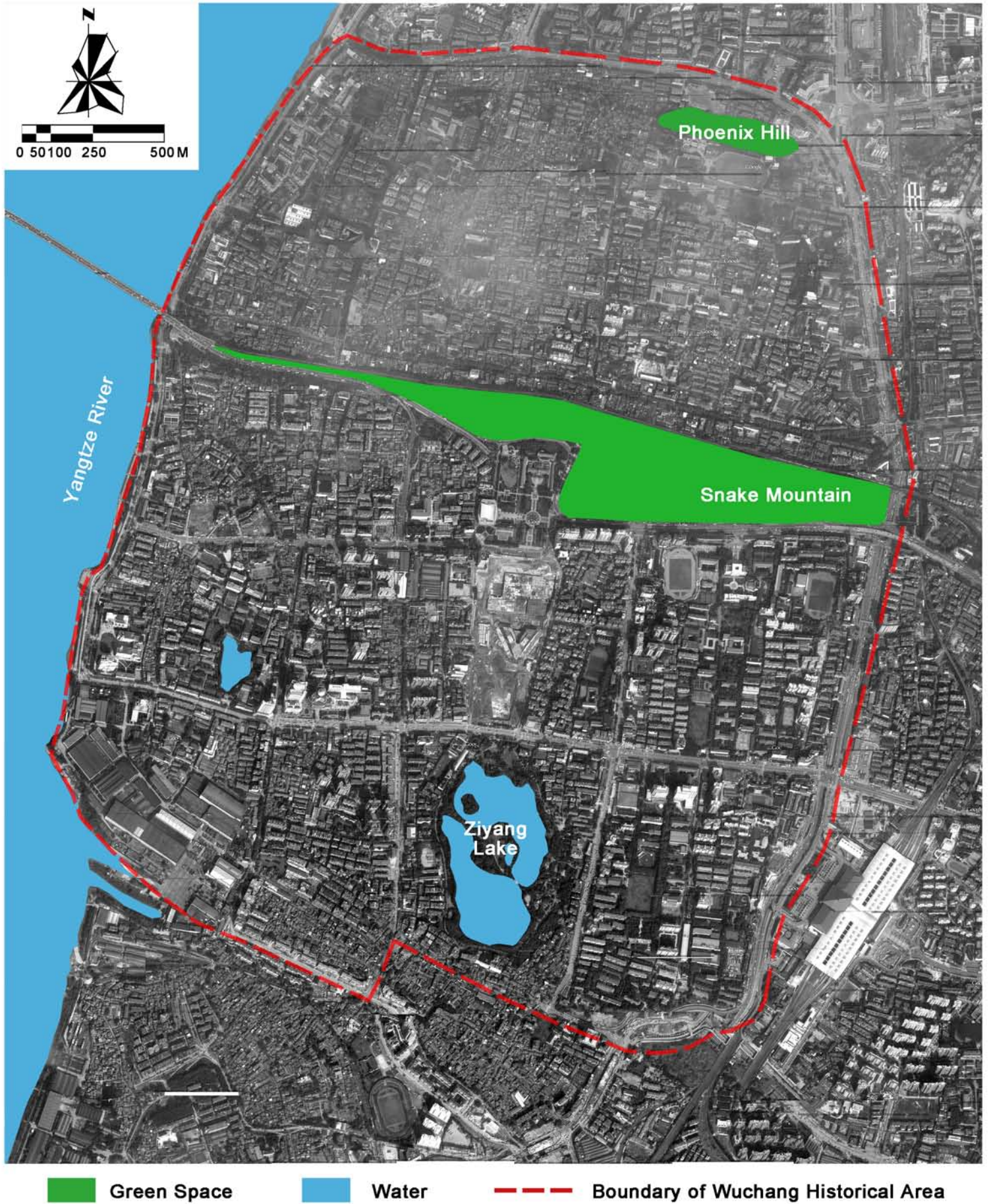
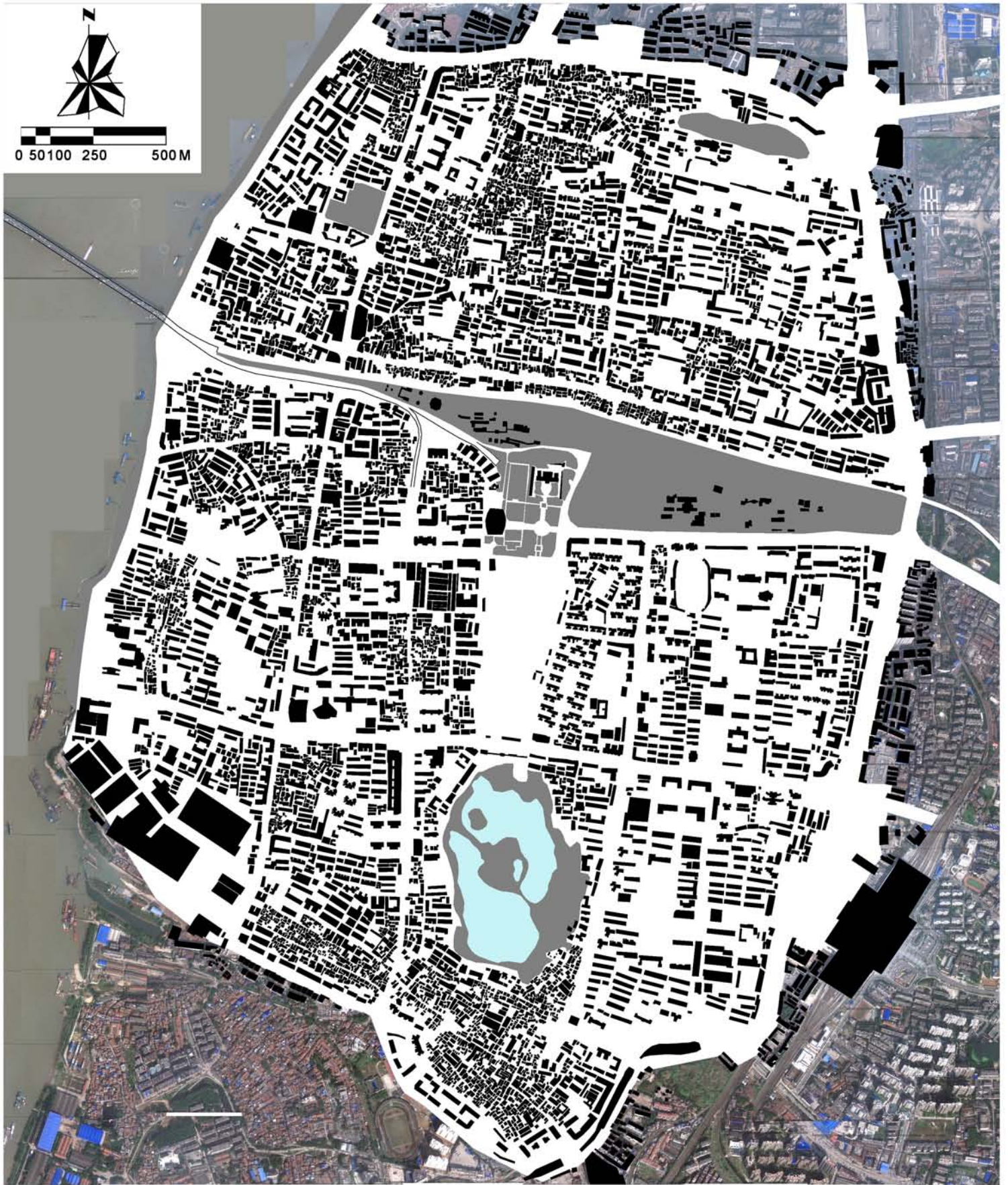
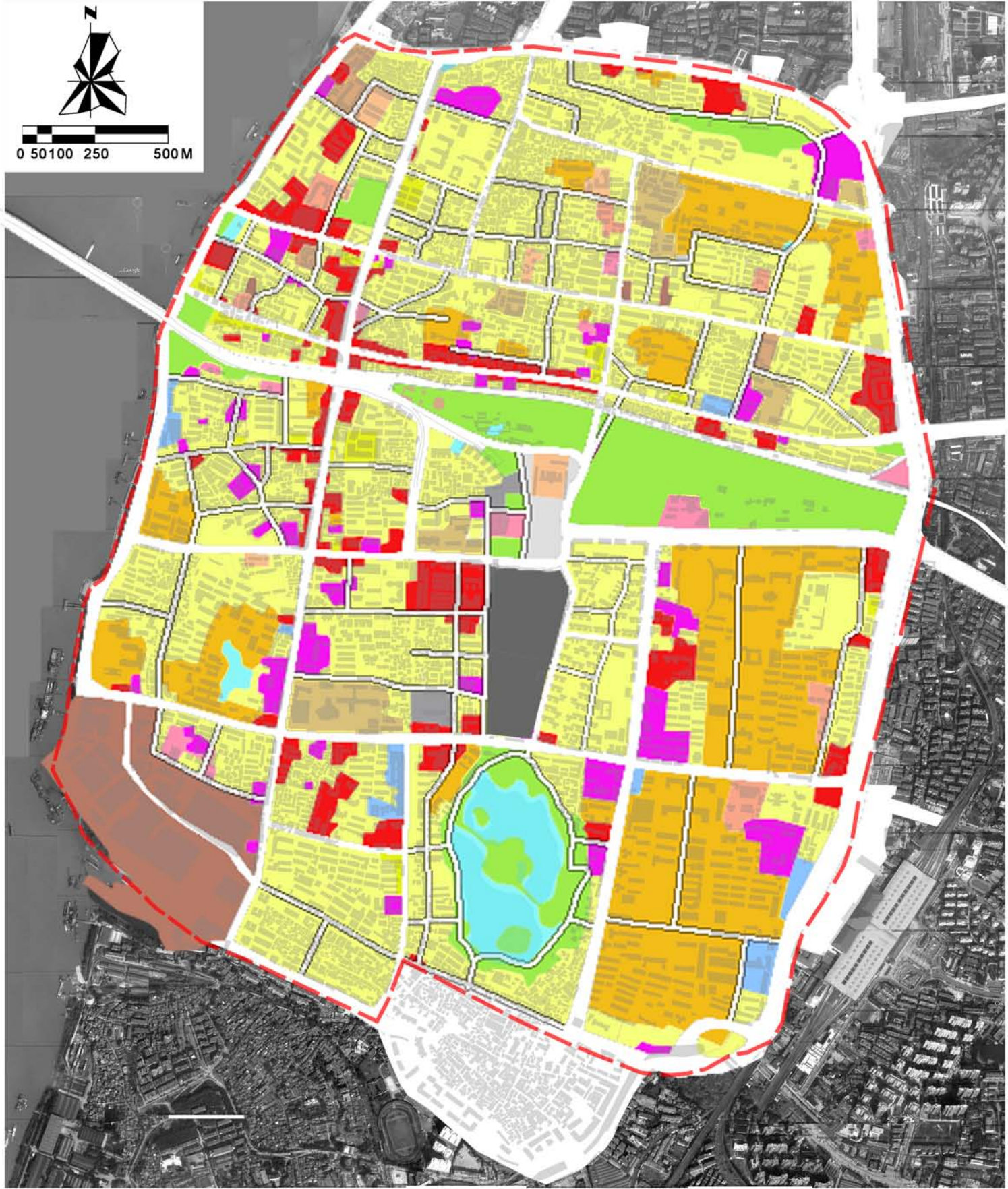


Figure 2 Natural Conditions



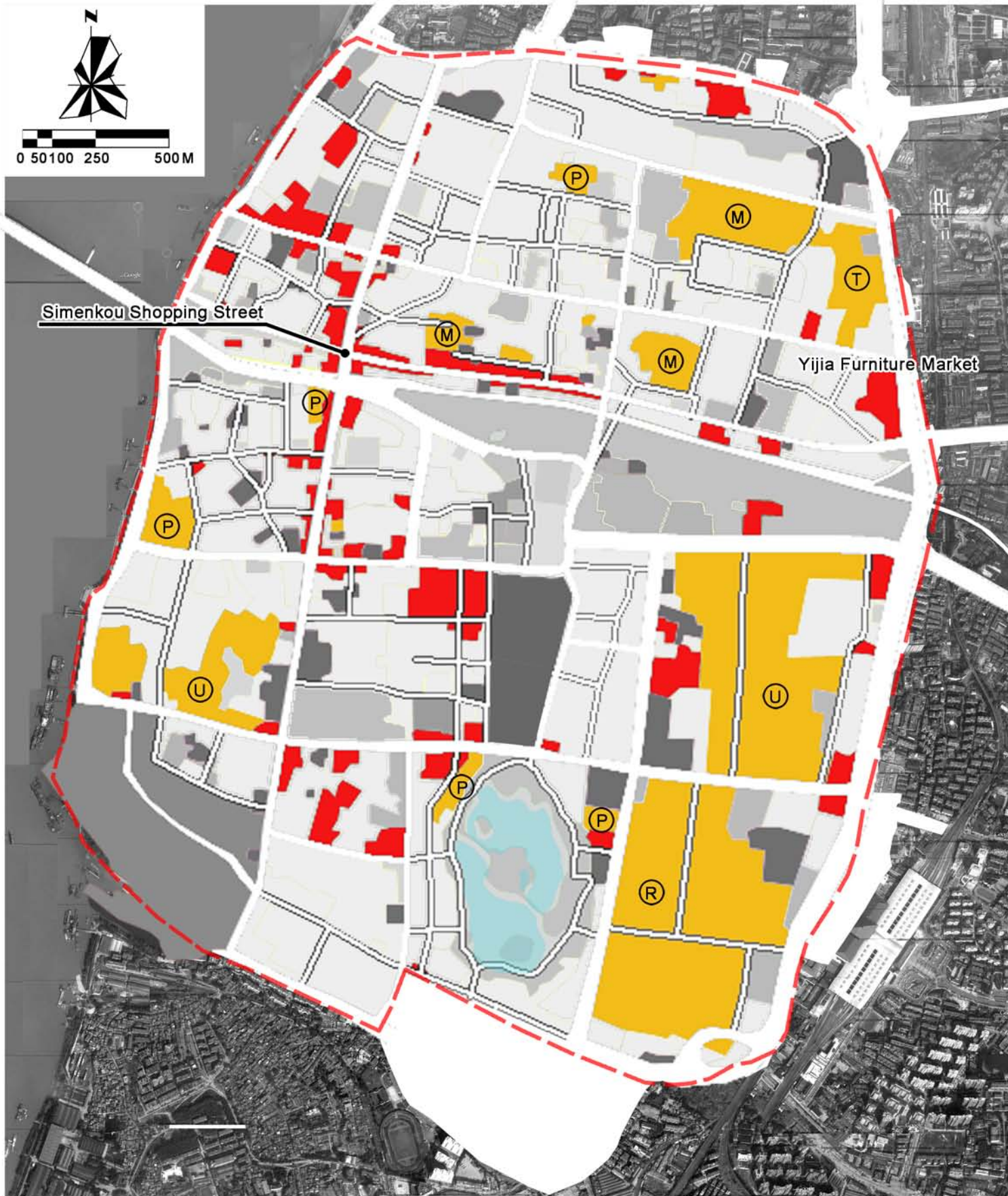
■ Solid □ Void (Space) ■ Green Space

Figure 3 Present Urban Space in Wuchang Historical Area



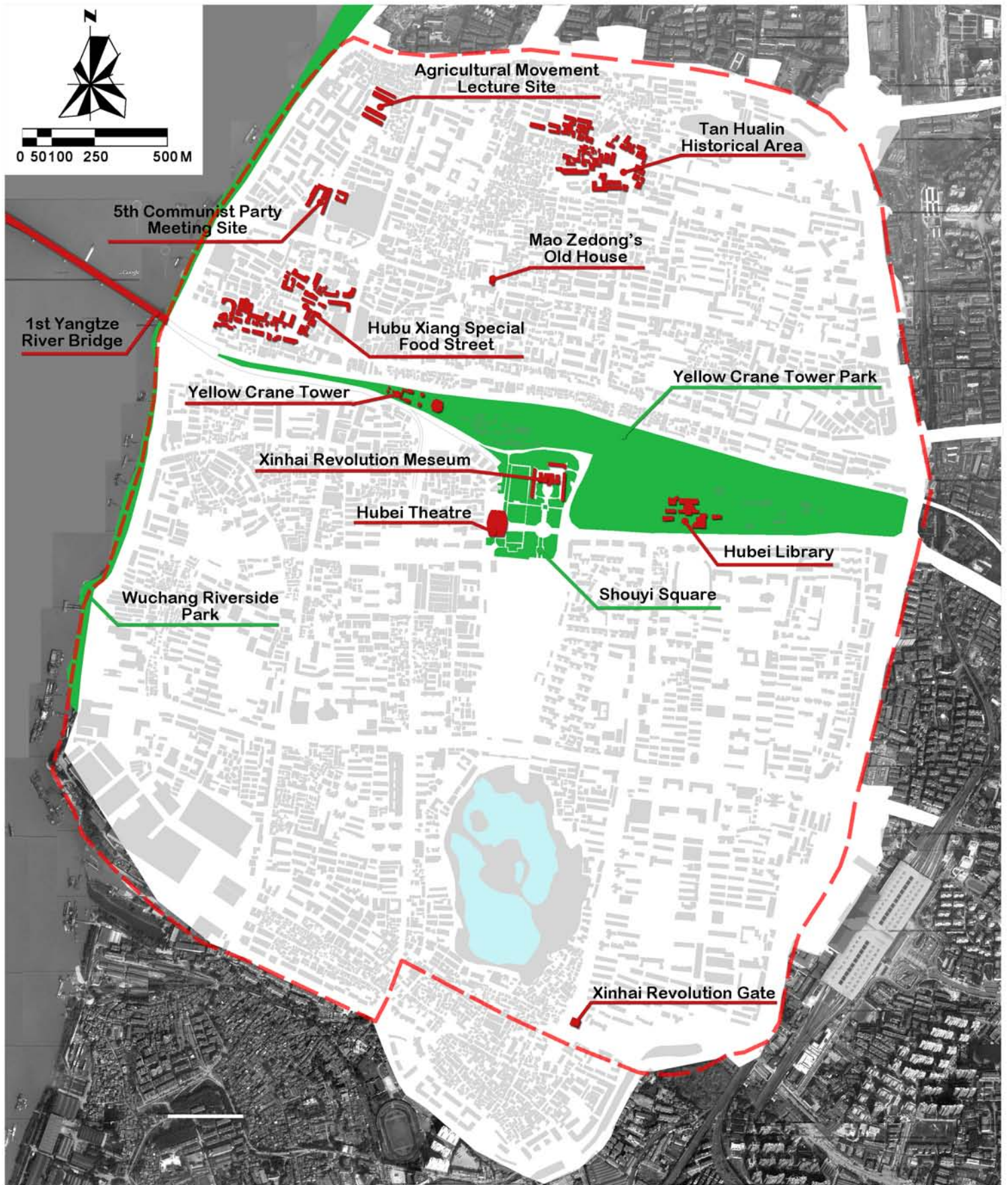
- | | | | | | |
|--|---|--|--|--|---|
| Residential | Commercial and Financial | Administration and Office | Education and Research | | |
| Culture and Health | Green Space | Light Industry | Heavy Industry | Historical Places | |
| Square | Parking Space | Municipal Facility | Water | Empty | Area Boundary |

Figure 4 Land Use



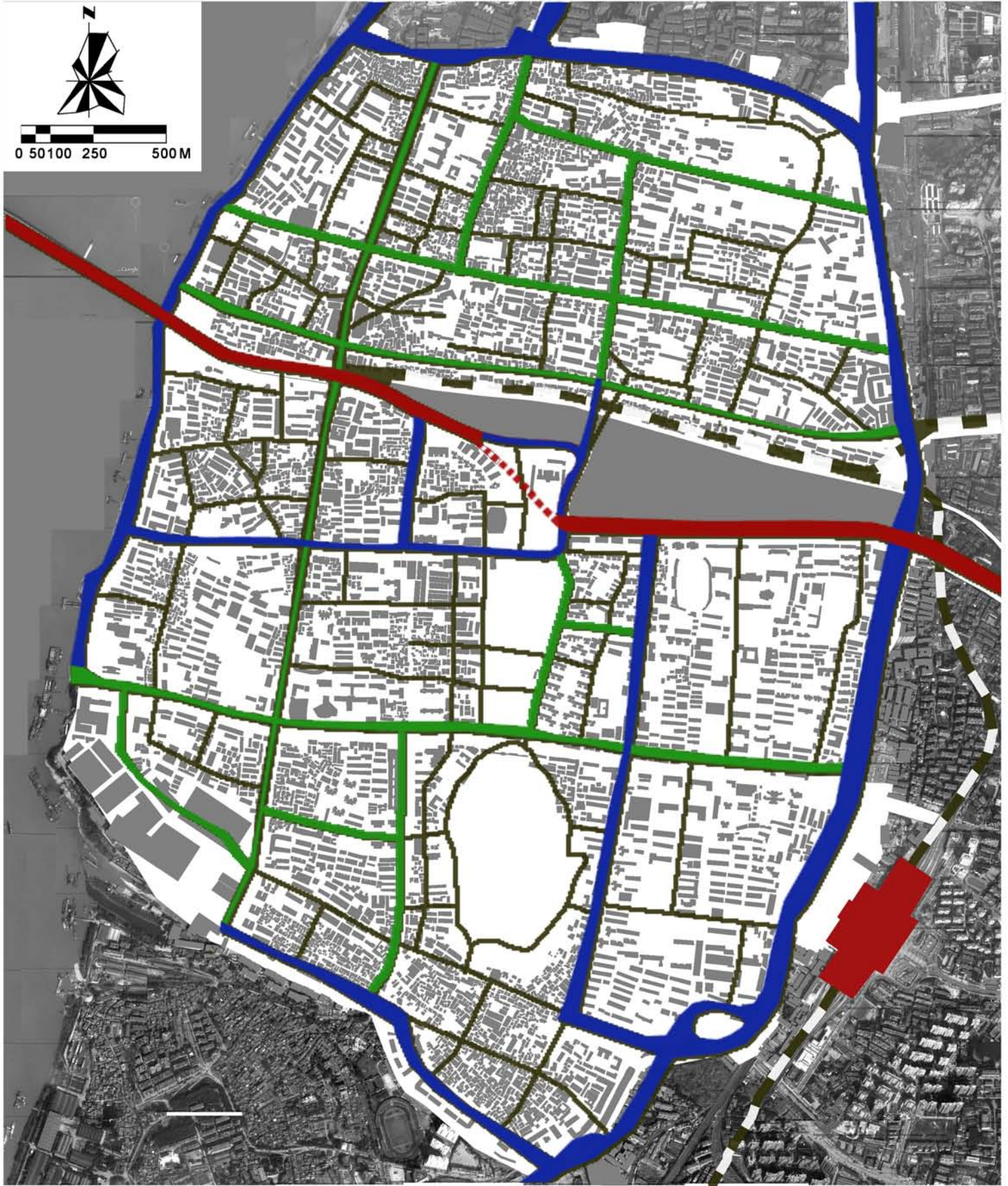
- Commercial and Financial
- U University
- T Technique School
- R Research Institute
- M Middle School
- P Primary School
- Area Boundary

Figure 5 Services and Facilities



Historical and Cultural Places
 Natural Places
 Area Boundary

Figure 6 The Places



- | | | | |
|-----------|--------------|-----------------|-------------|
| Fast Road | Primary Road | Secondary Road | Branch Road |
| Tunnel | Railway | Railway Station | Urban Space |

Figure 7 Connectivity of Urban Space

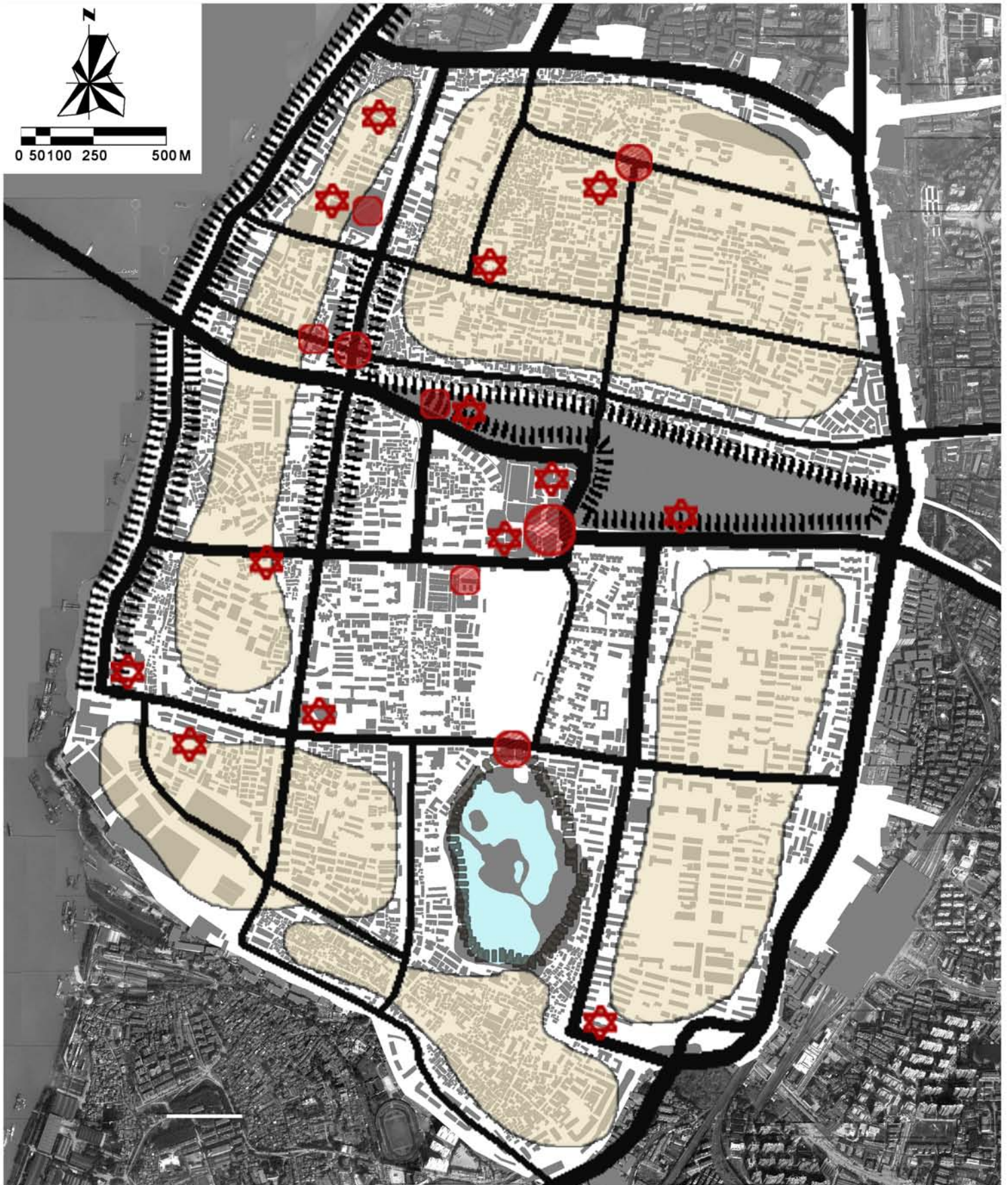


Figure 8 Legibility of Urban Space

Urban Road Space



Use of Space

■ Traffic Space
 ■ Walking Space
 ■ Shops



Walking & Passing



Shopping



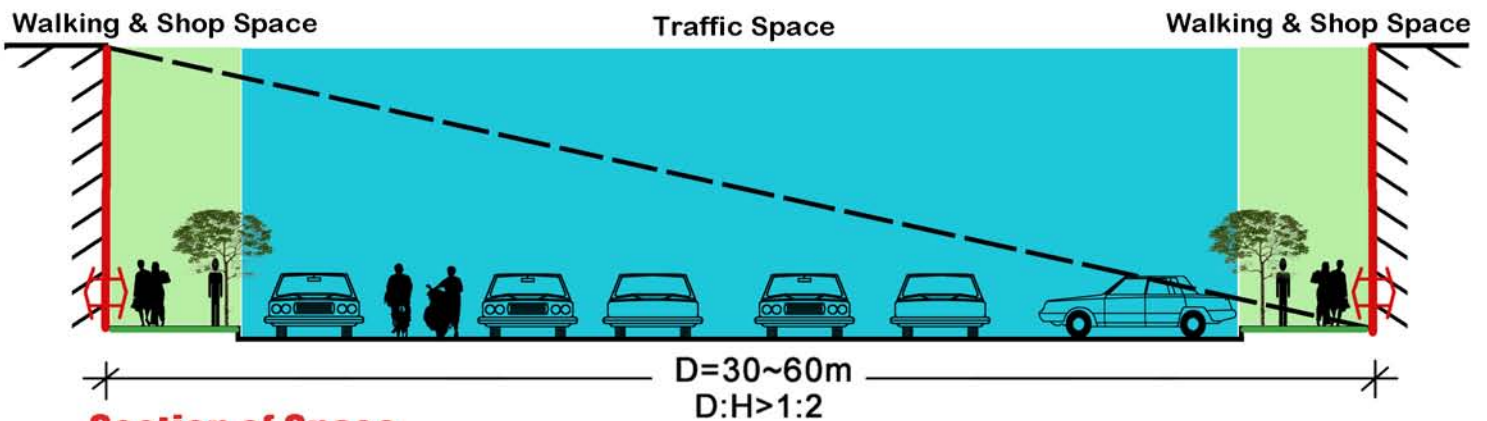
Riding



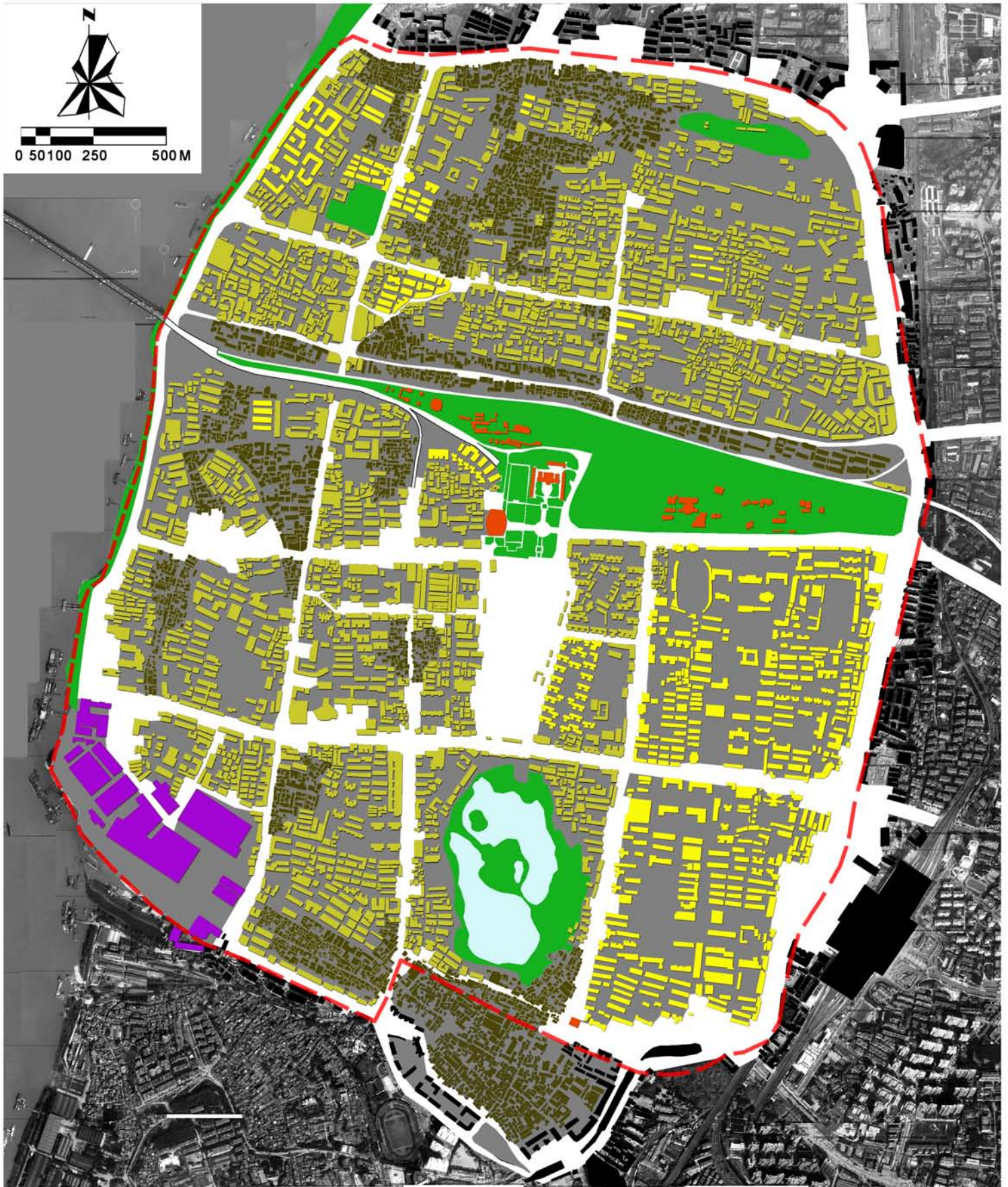
Riding



Driving & Parking



Section of Space










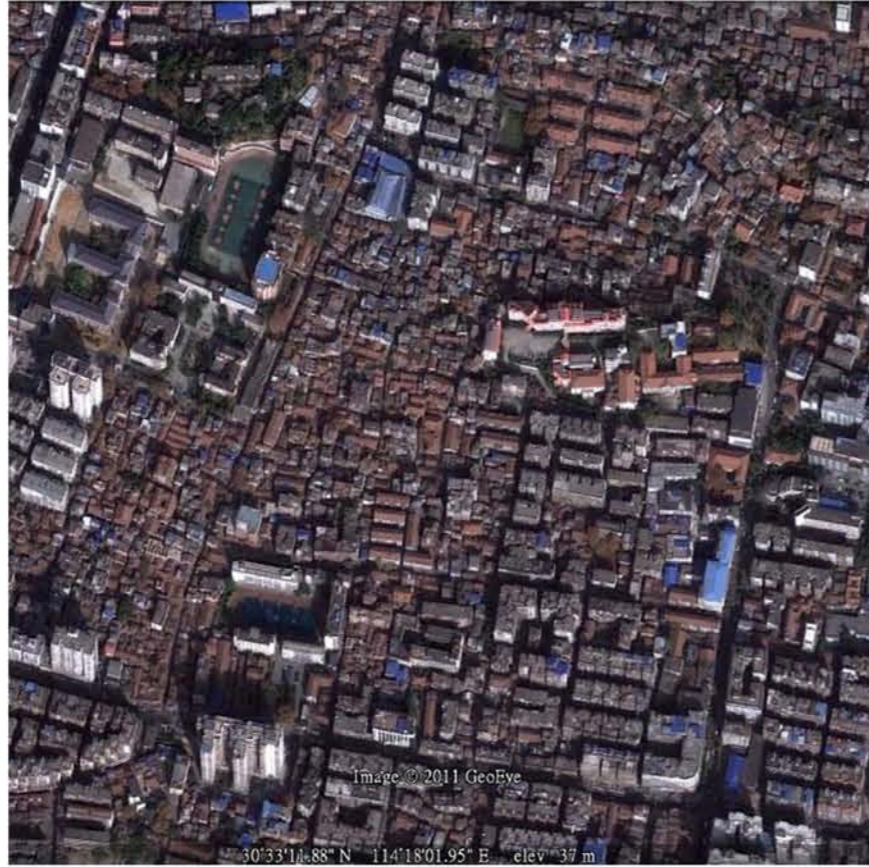
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|--|----------------------|---|---------------|---|-------------------|---|-----------------|
|  | Urban Road |  | Urban Village |  | Mosaic Settlement |  | Neat Settlement |
|  | Green and Open Space |  | Citadel |  | Area Boundary | | |

Figure 9 Different Patterns of Urban Space

Pattern Profile

Urban Village



Spatial Features



Streets

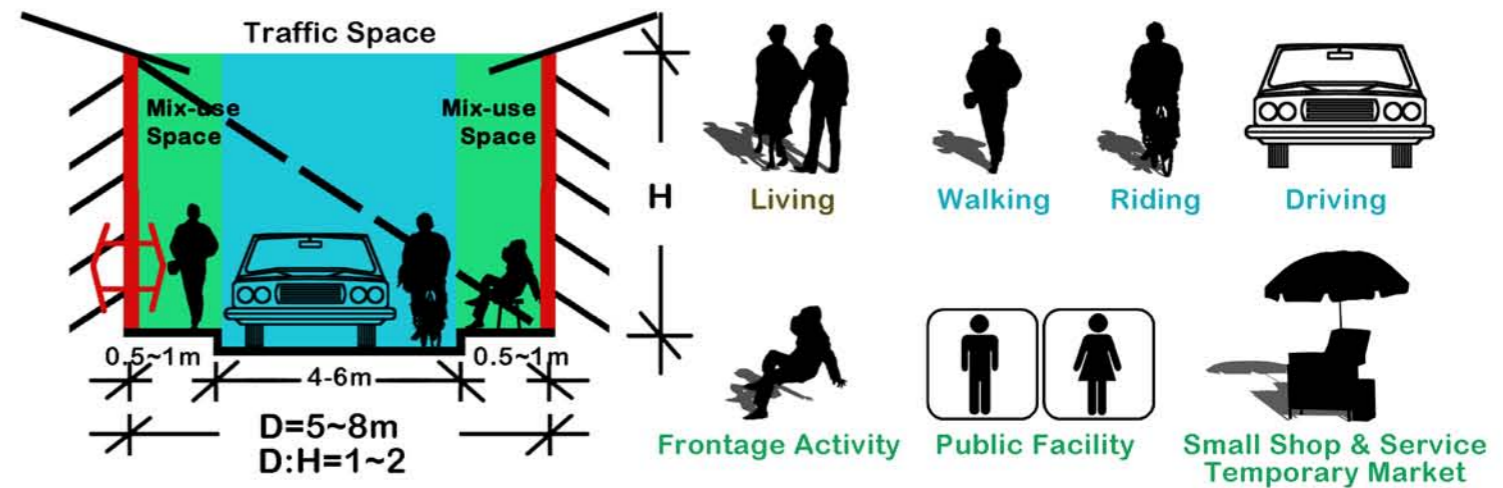


Buildings

Spatial Elements



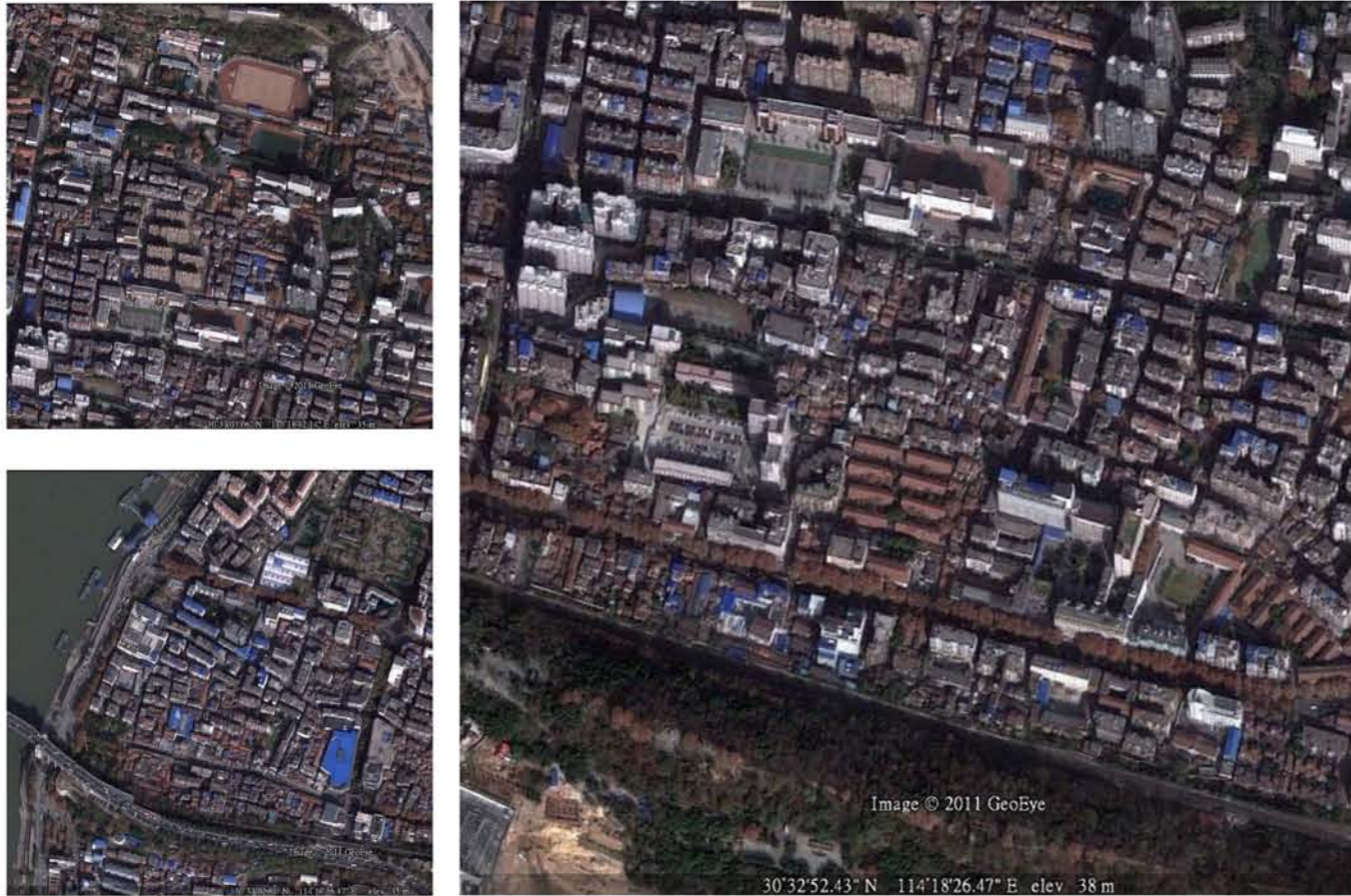
Use of Space ■ Mixe-use Area — Traffic Space — Small Shops & Services



Section of Space

Pattern Profile

Mosaic Settlement



Spatial Features



Buildings



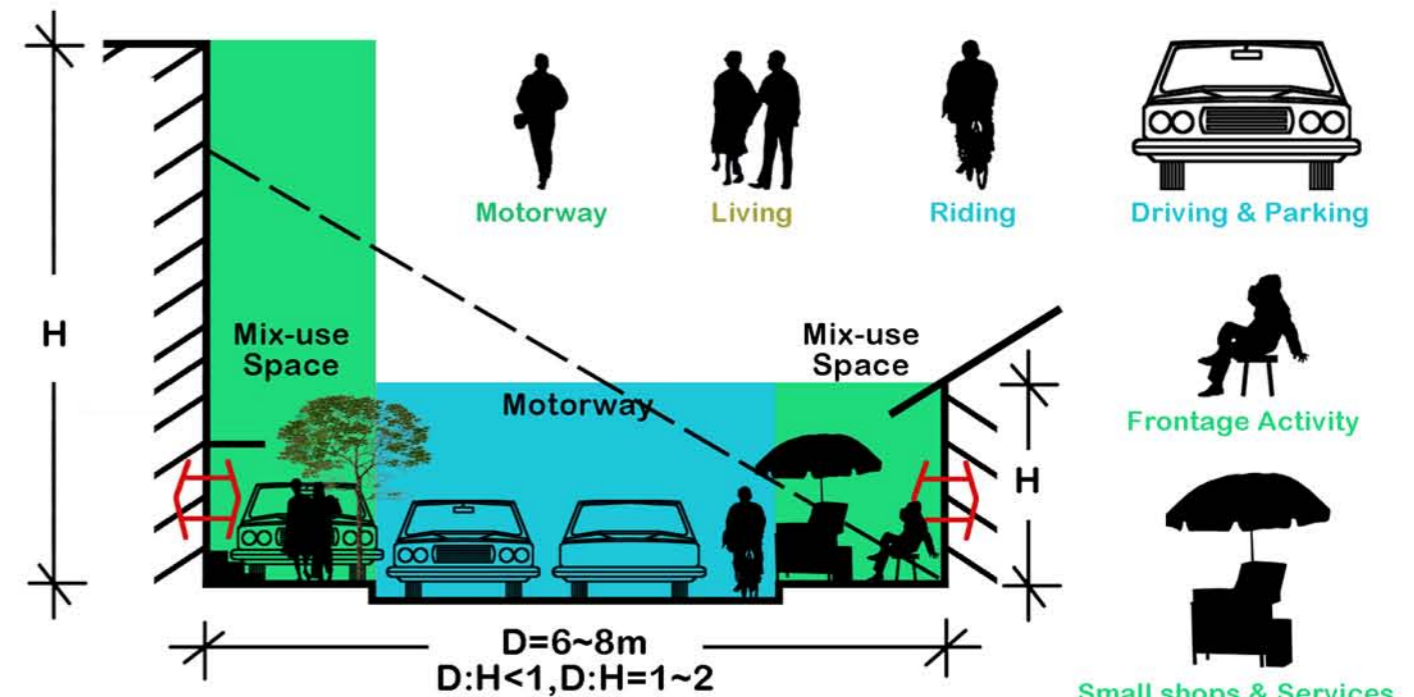
Streets

Spatial Elements



Use of Space

- Motorway
- Mix-use Space
- Interior-use Green Space
- Shops & Services
- Interior-use Empty Space



Section of Space

Pattern Profile

Neat Settlement



Spatial Features

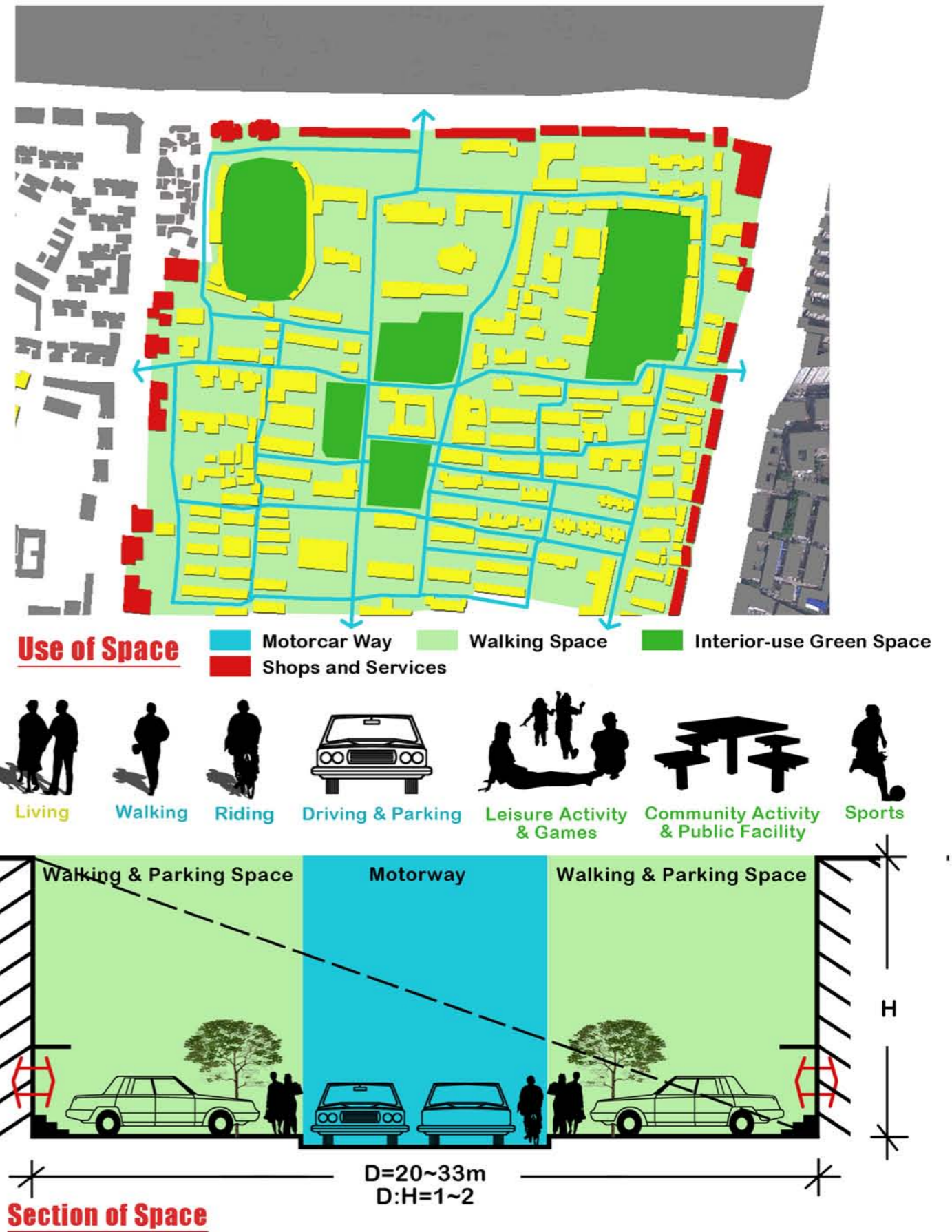


Buildings & Streets



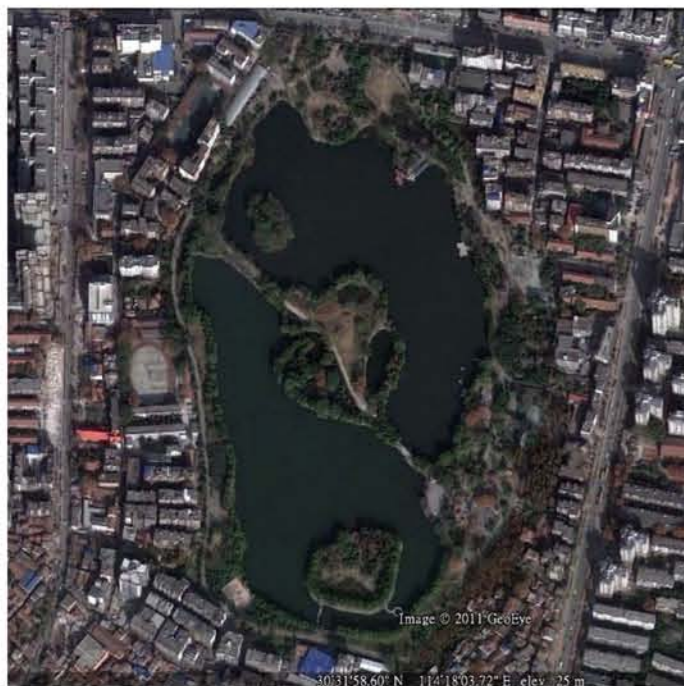
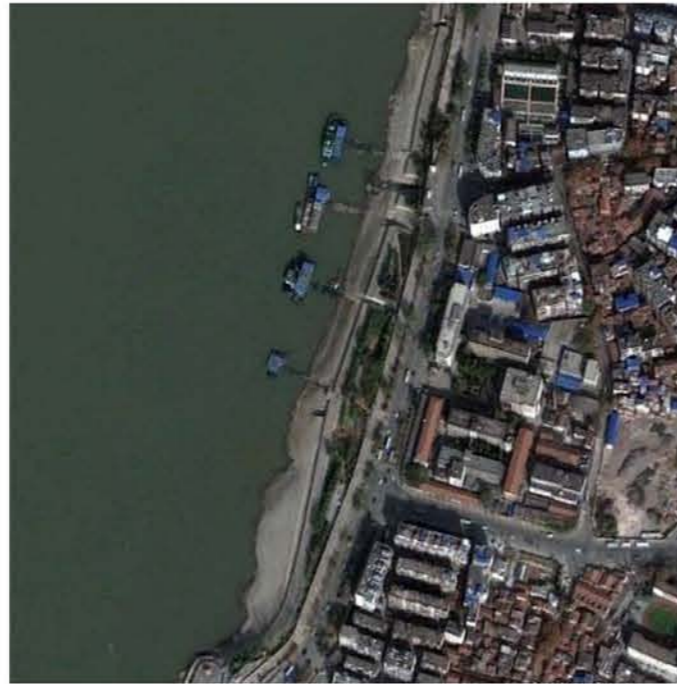
Buildings & Streets

Spatial Elements



Group figure 6

Pattern Profile Green and Open Space



Spatial Elements



Leisure Activity & Games



Leisure Walk



Gathering & Social Activity



Tourist Activity

Spatial Features

Use of Space

- Green Space
- Water
- Walking Space
- Square

Pattern Profile

Citadel



Spatial Features



Use of Space

-  Traffic Space
-  Interior Green Space
-  Living Space
-  Outdoor Working Space

Group figure 8

Transformation



Operations



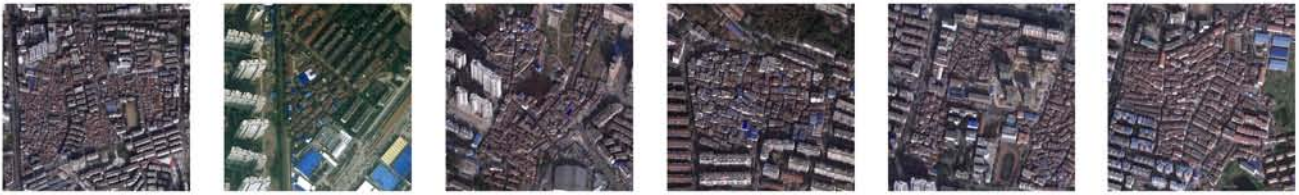
Shouyi Cultural Area Planning
Group figure 9



Urban Village Mosaic Settlement Neat Settlement Green and Open Space: Riverside Green Space

Figure 10 Repetition of Spatial Patterns in the City of Wuhan

Pattern Families



Urban Village



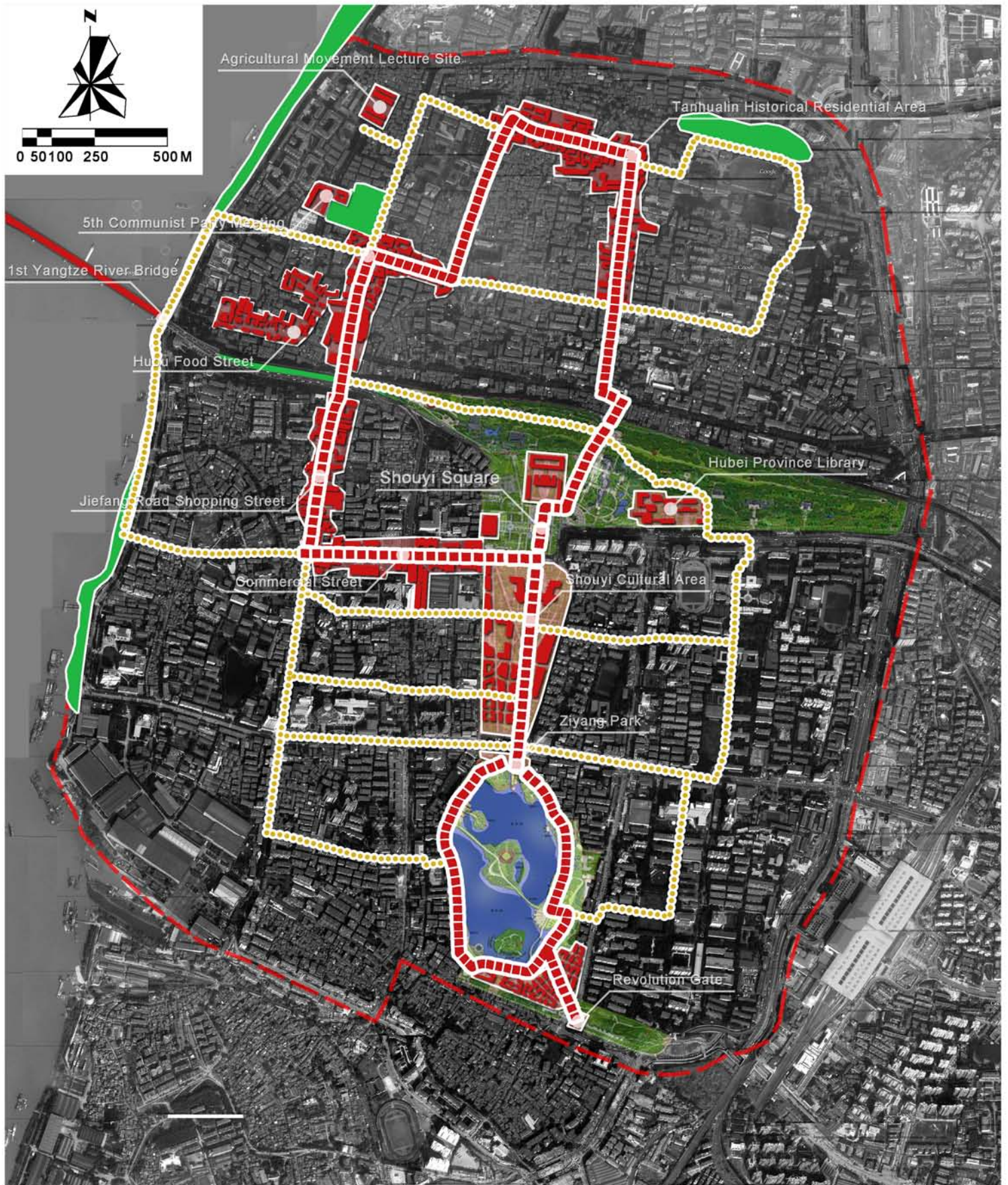
Mosaic Settlement



Neat Settlement

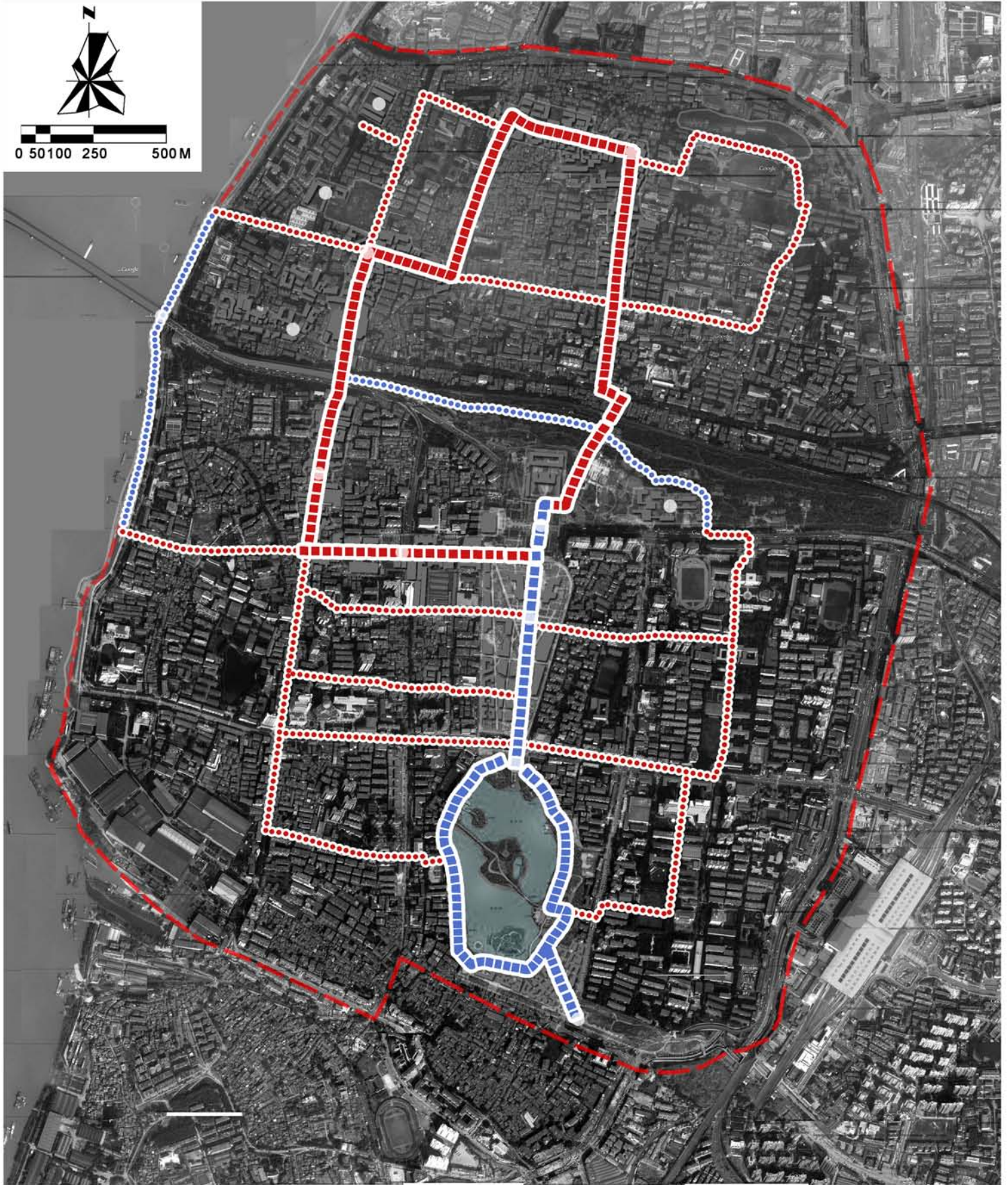


Green and Open Space



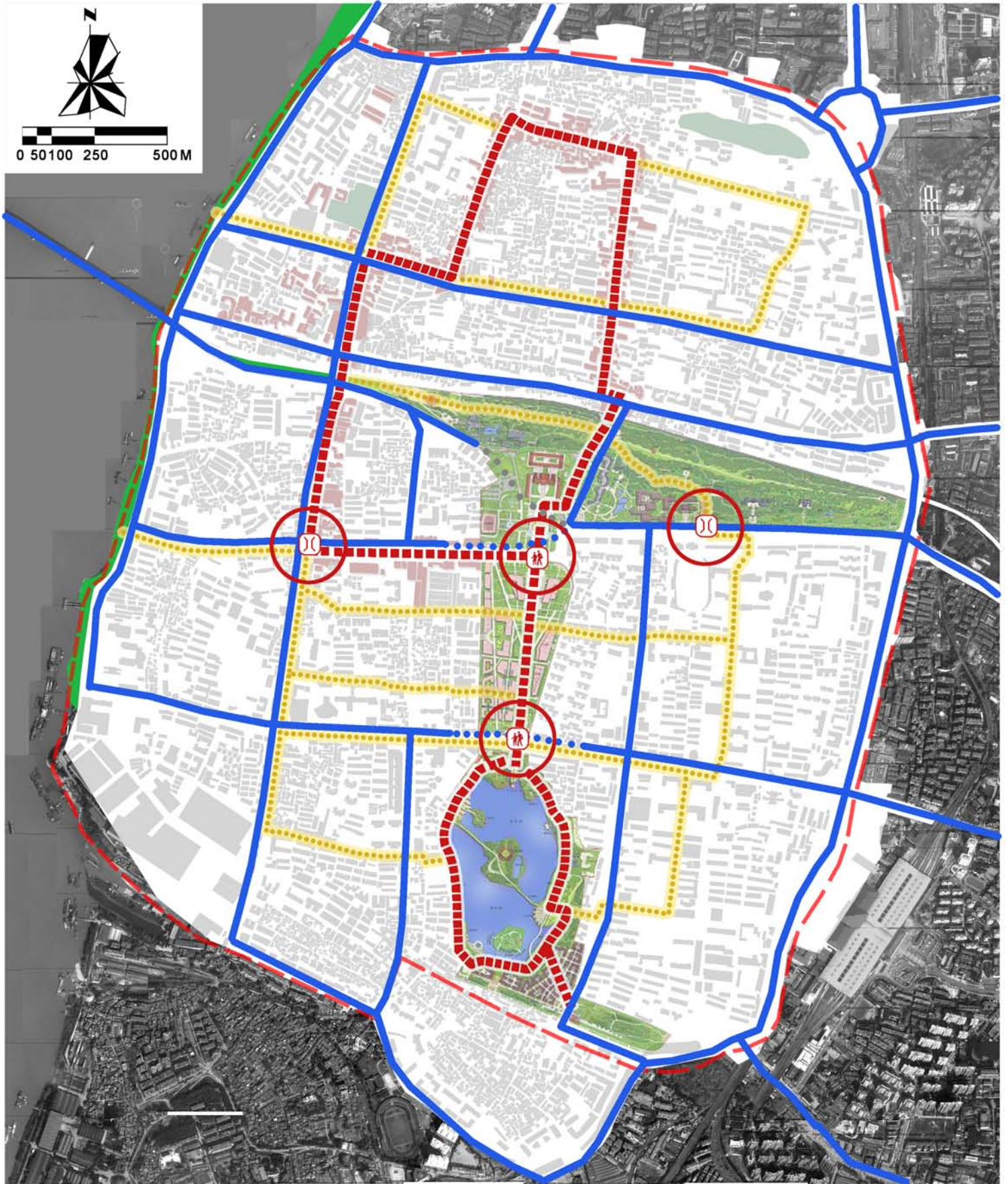
■■■■ Primary Walk-trip Path Proposed
 ●●●● Secondary Walk-trip Path
 ■ Main Places
 ■ Green Space

Figure 11 The Walk-trip Network



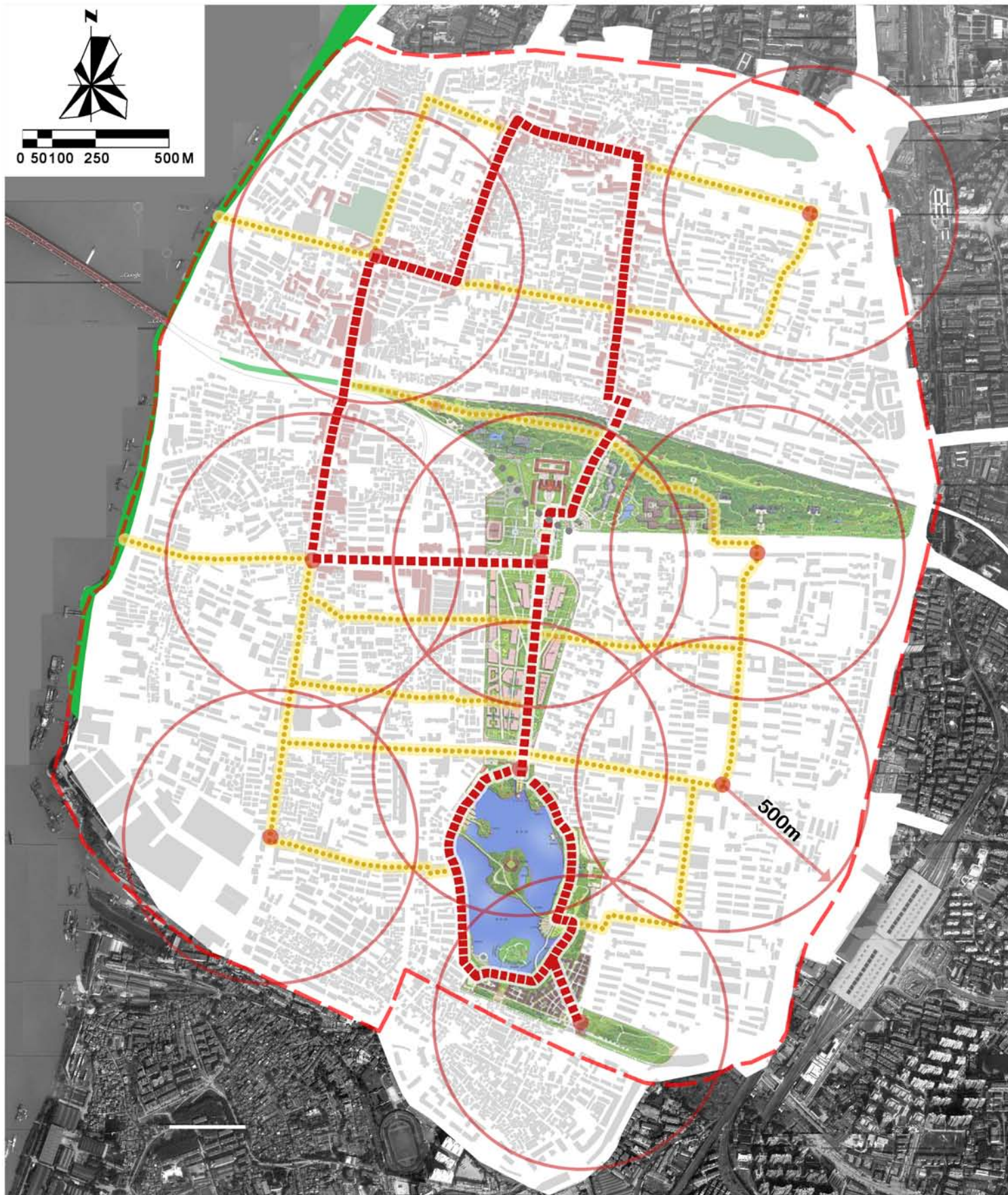
■■■■ Walk-trip Path Proposed ●●●● Walk-trip Path in Operation

Figure 12 Paths Proposed and in Operation



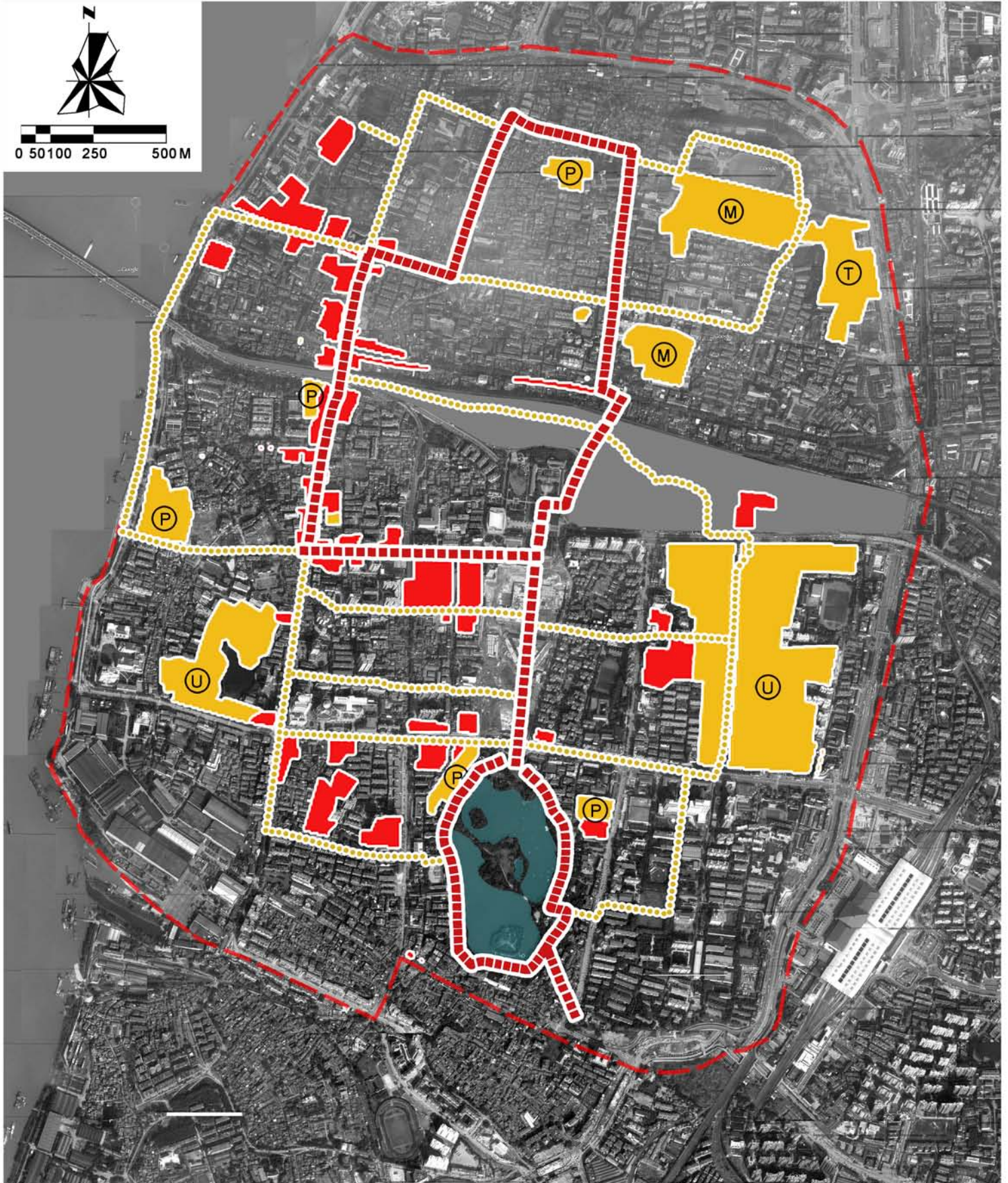
- Main Walk-trip Path
 Sub Walk-trip Path
 ———— Main Car Path
 Existing Tunnel
..... New Tunnel
○ Main Conflict Point
○ New Flyover
○ New Walkers' Square

Figure 13 Walkers and Cars



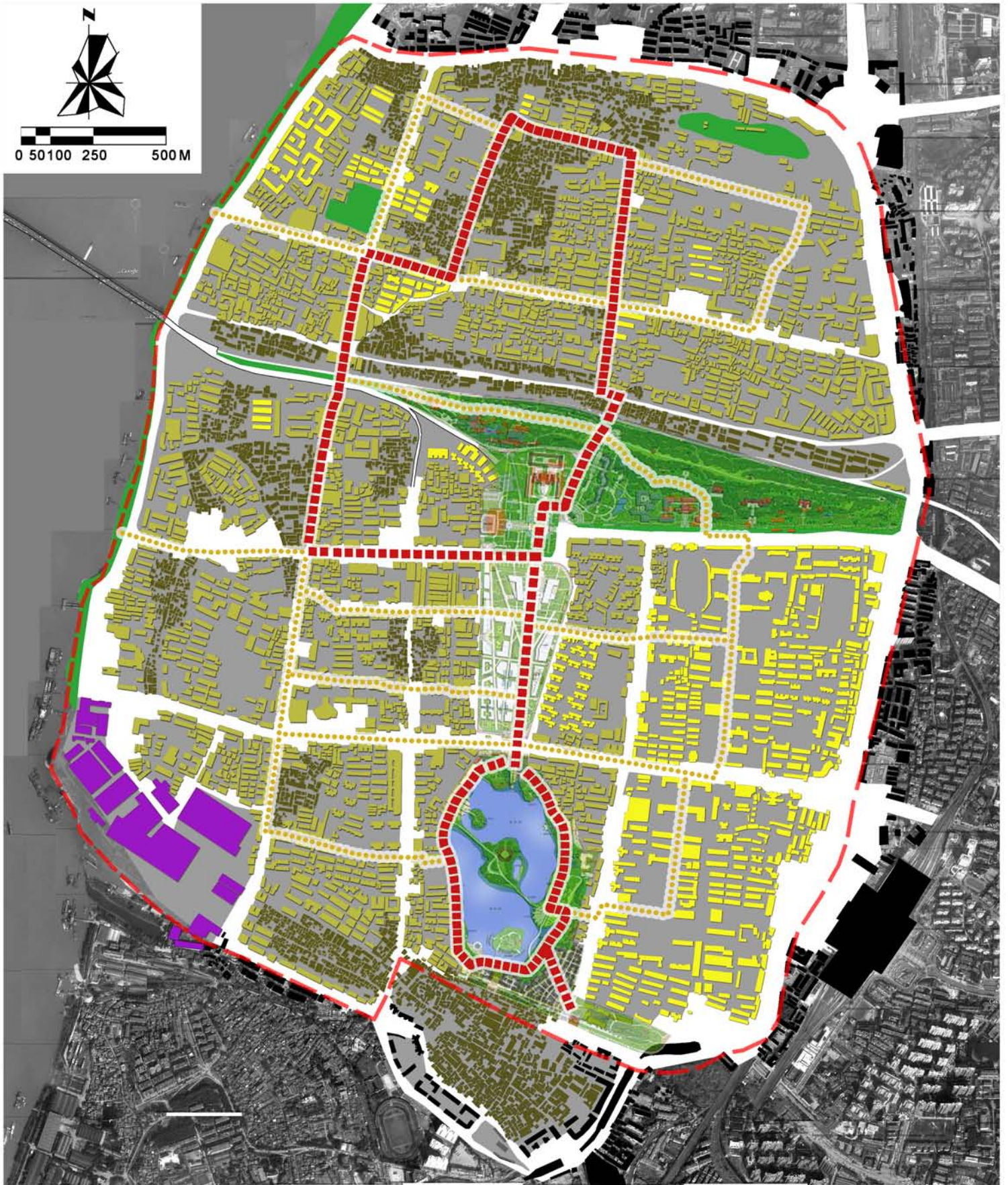
■■■■ Main Walk-trip Path
 Sub Walk-trip Path
 ● Walking Radius - 500m

Figure 14 Walking Distances



- Commercial and Financial
- U University
- T Technique School
- R Research Institute
- M Middle School
- P Primary School
- Area Boundary

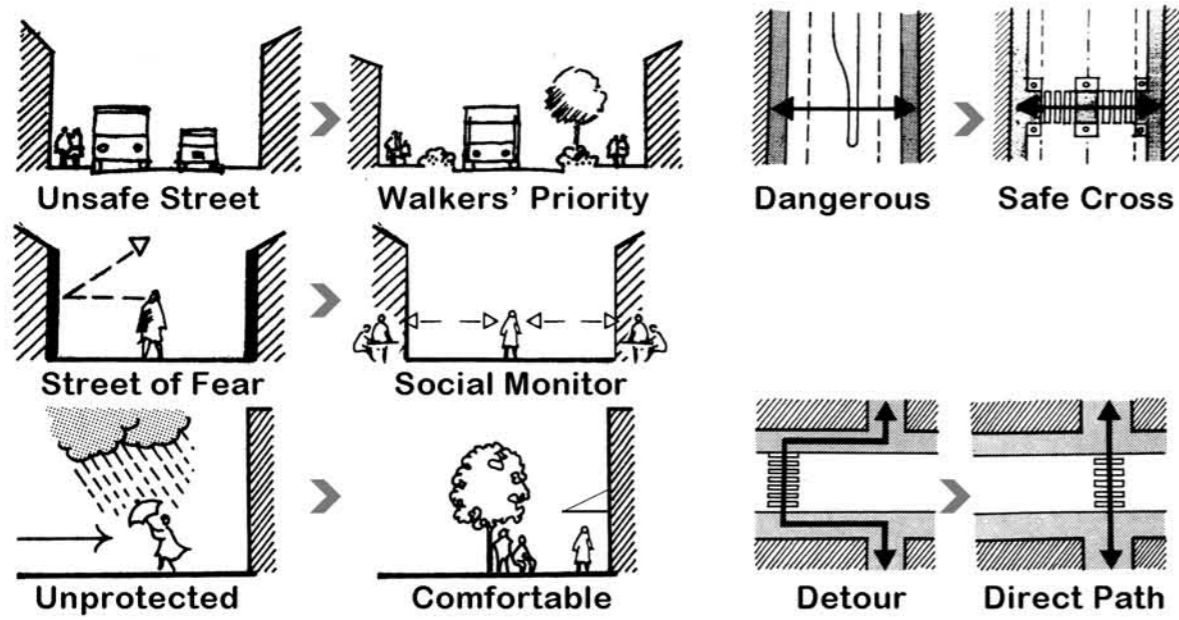
Figure 15 Main Services and Facilities in the Walk-trip Network



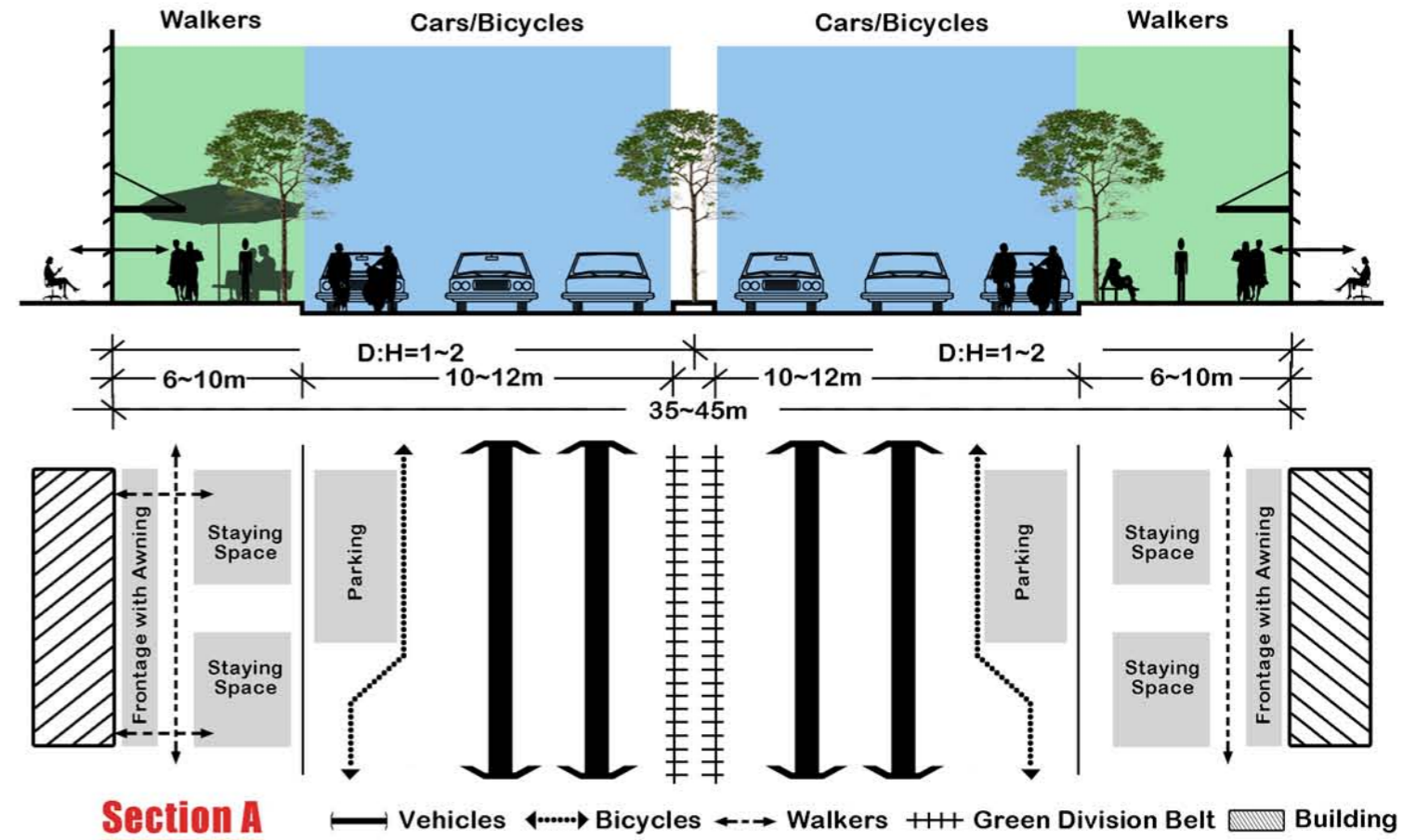
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|--|----------------------|---|---------------|---|---------------------|---|--------------------|
|  | Urban Road |  | Urban Village |  | Mosaic Settlement |  | Neat Settlement |
|  | Green and Open Space |  | Citadel |  | Main Walk-trip Path |  | Sub Walk-trip Path |

Figure 16 Spatial Patterns in the Walk-trip Network

In the Network Urban Road Space



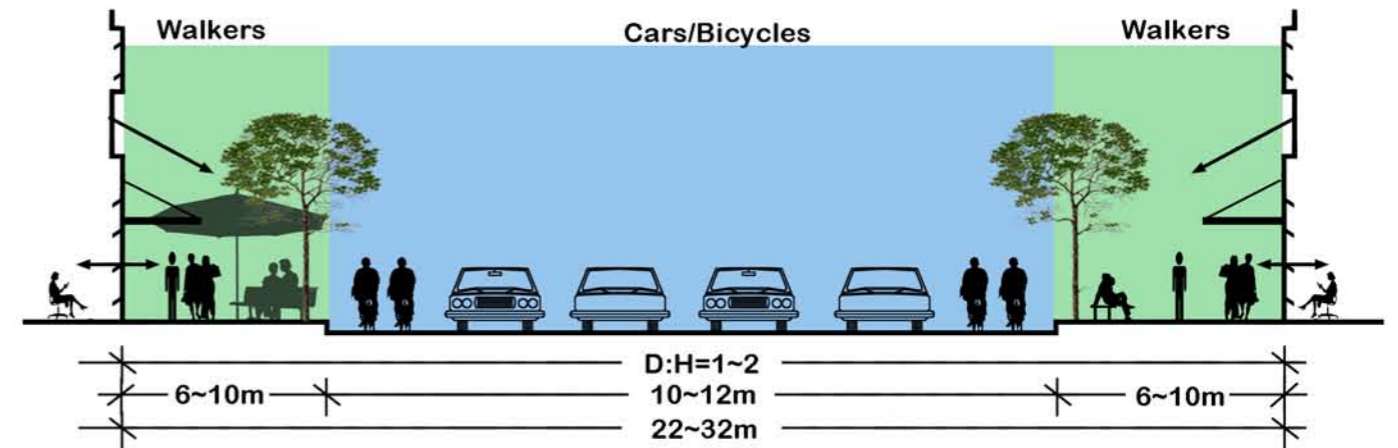
Main Problems & Interventions



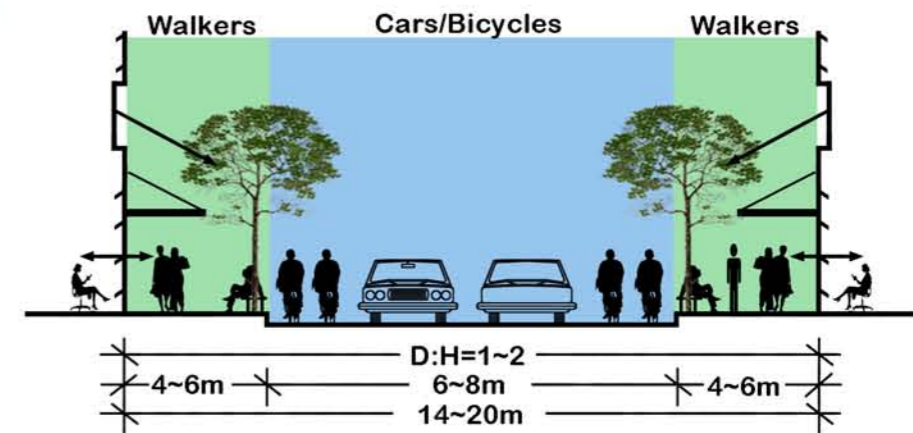
Section A — Vehicles — Bicycles — Walkers +++ Green Division Belt Building



Use of Space
 — Primary Walk-trip Path Proposed — Primary Walk-trip Path Existing
 — Secondary Walk-trip Path — Section Position

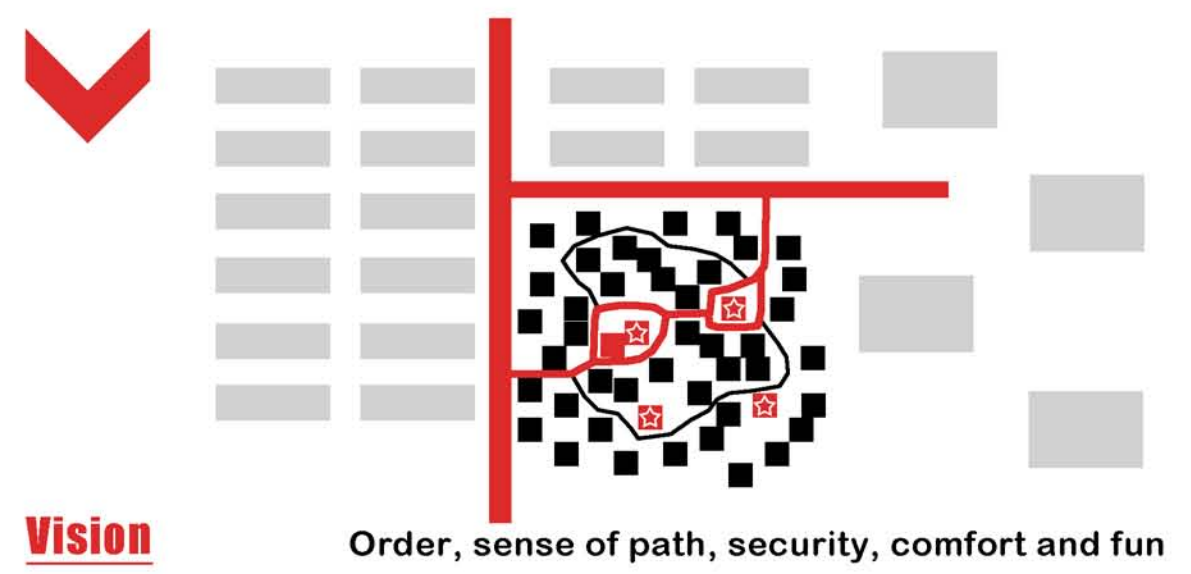
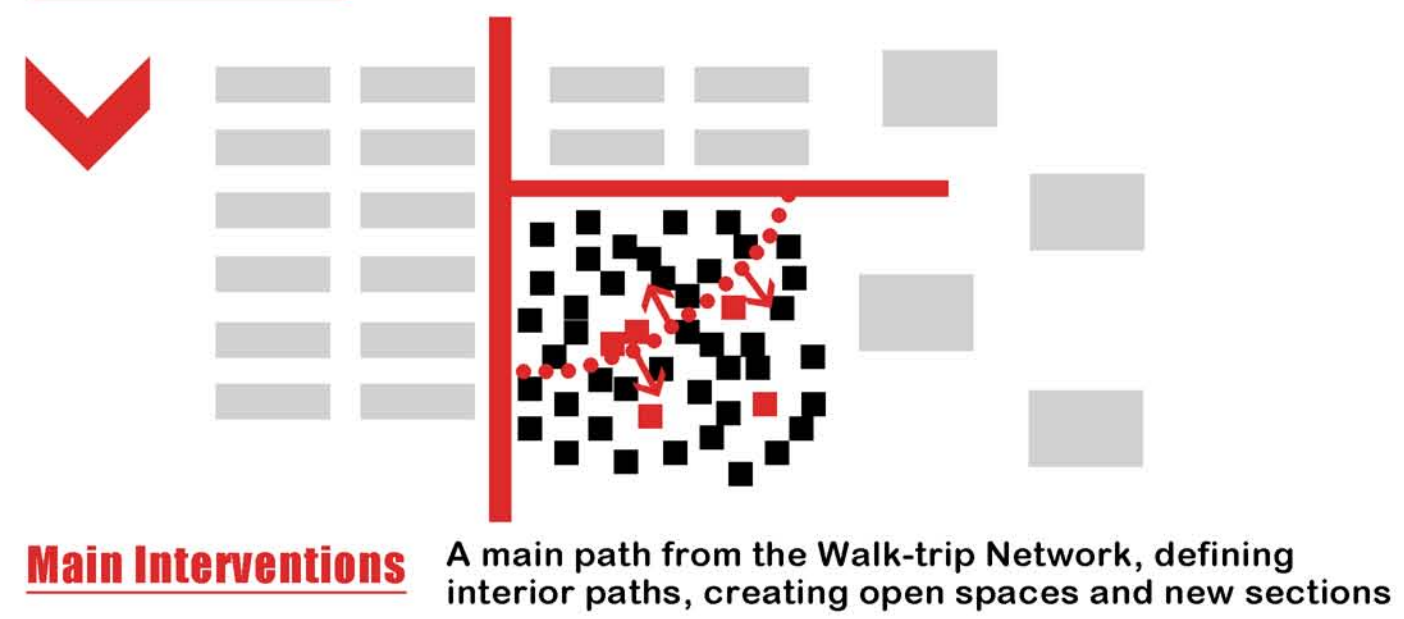
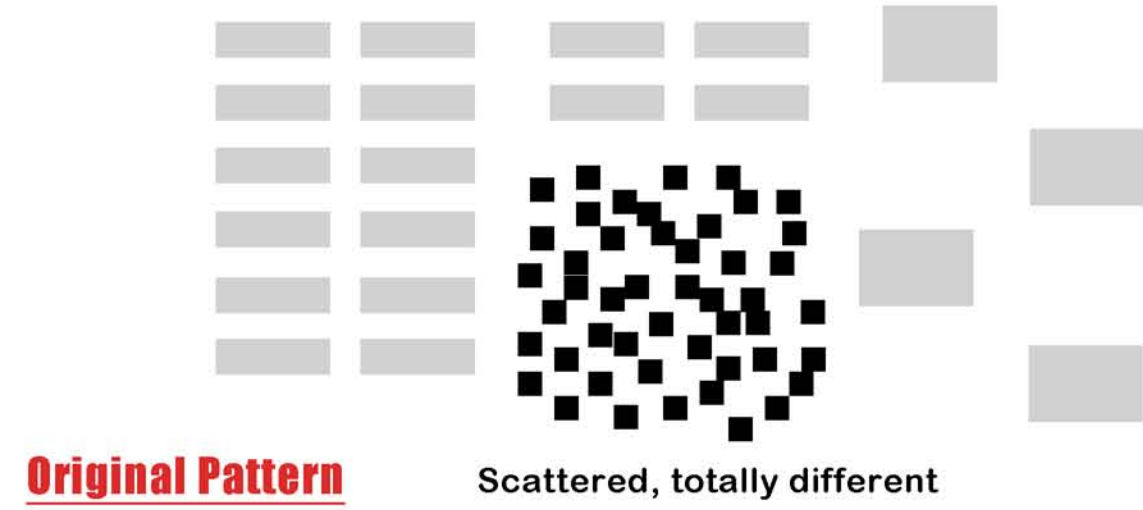


Section B



Section C

In the Network Urban Village



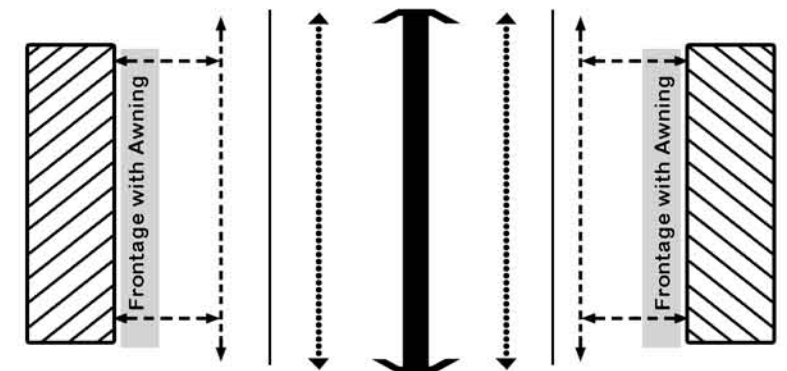
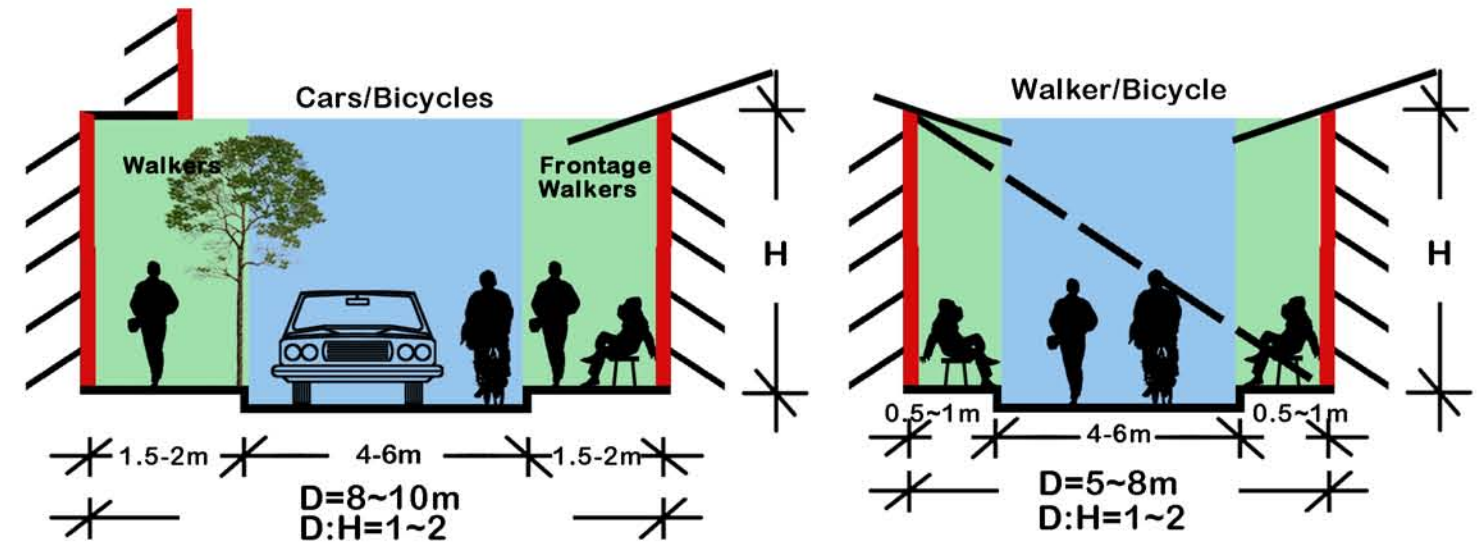
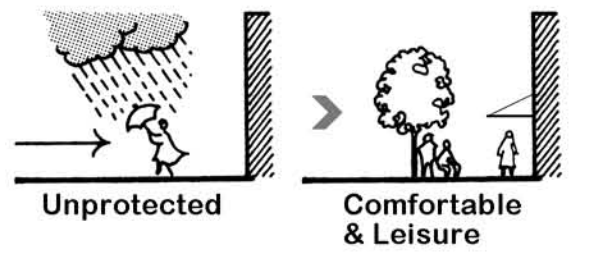
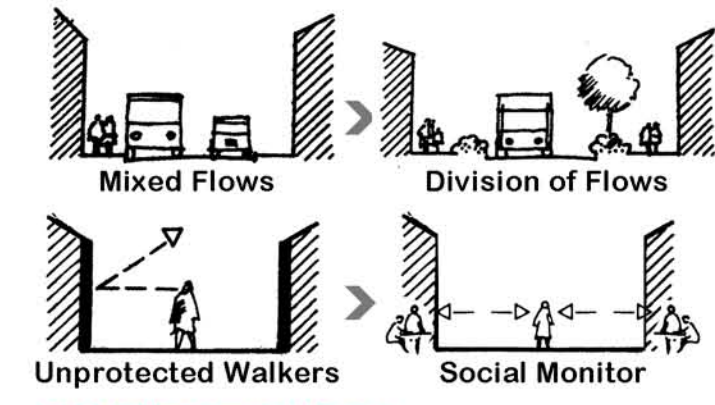
In the Network Urban Village



In the Network Urban Village

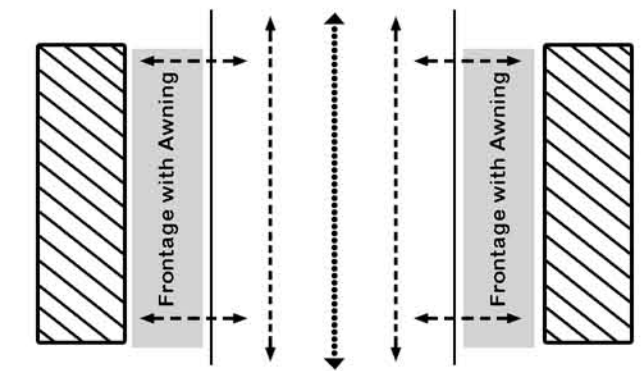


Priority to Walkers



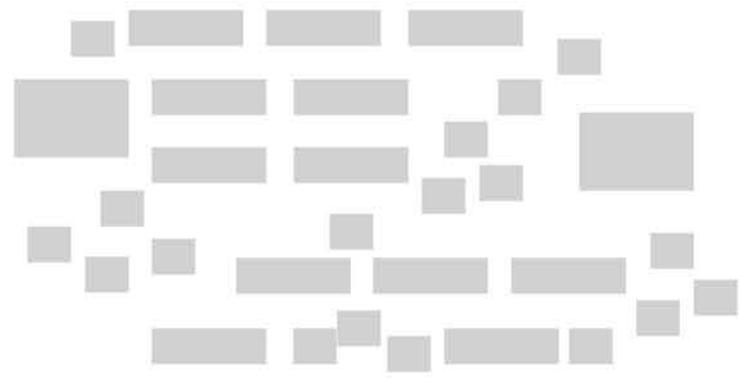
Section A

- Vehicles
- Bicycles
- - - Walkers
- ▨ Building

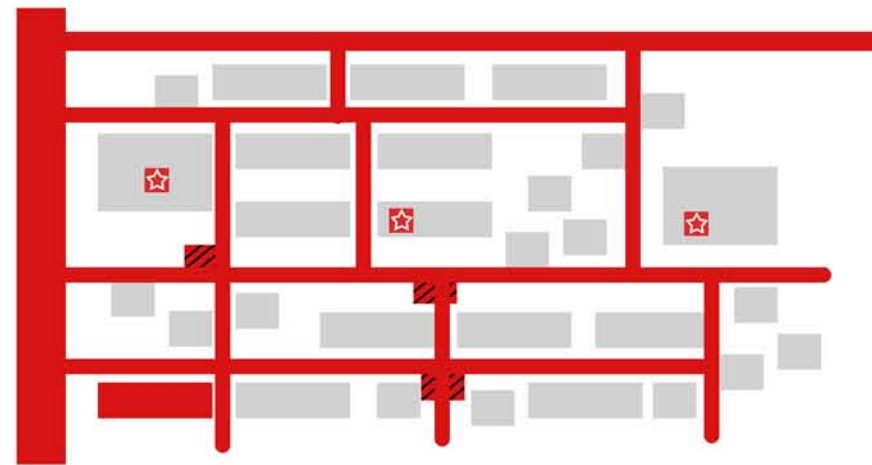


Section B

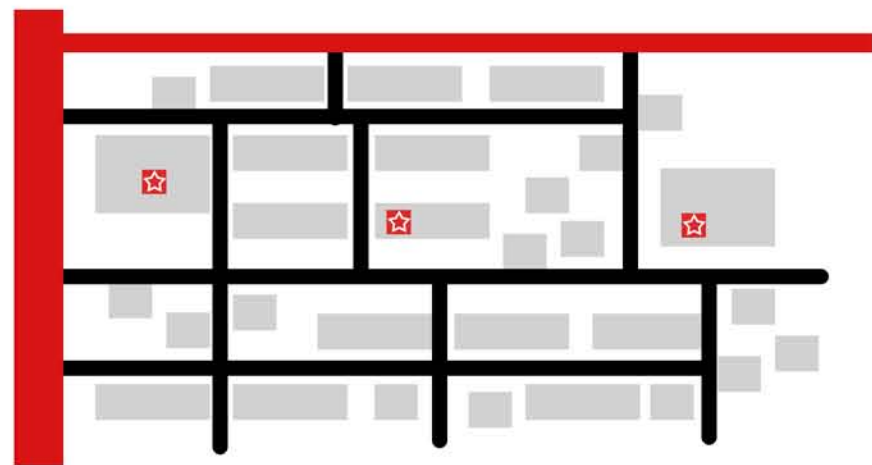
In the Network Mosaic Settlement



Original Pattern High density, mixture of different types of buildings



Main Interventions Relating to the Walk-trip Network, redefining interior paths, removing some buildings and creating places

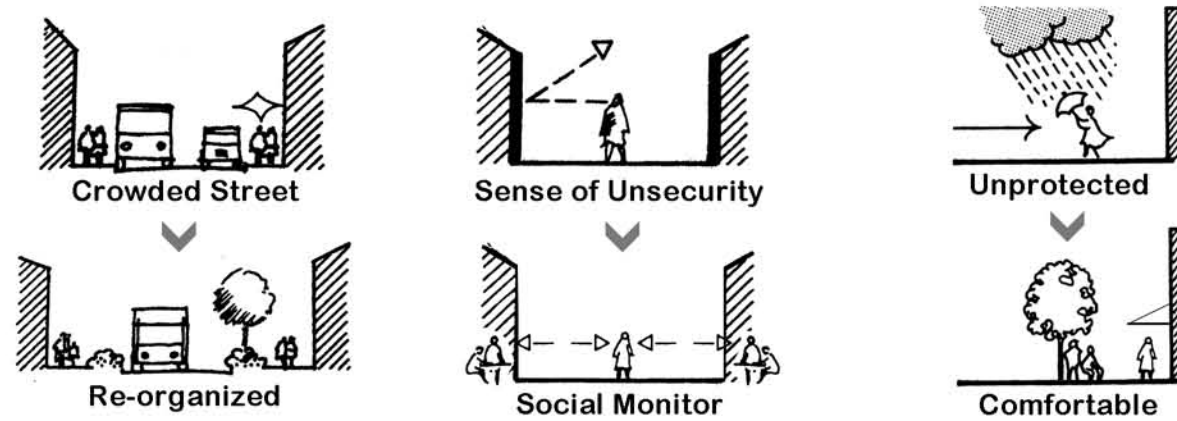


Vision Sense of order, security, comfort and fun

In the Network Mosaic Settlement

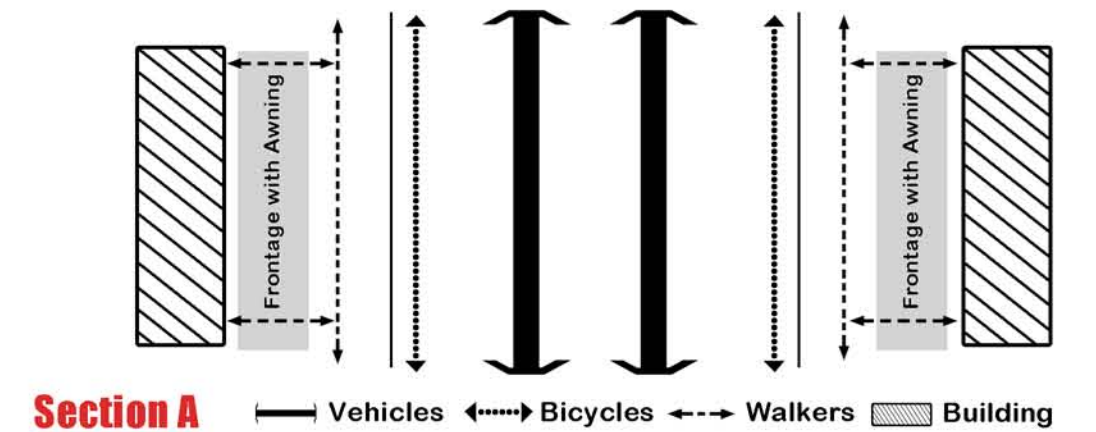
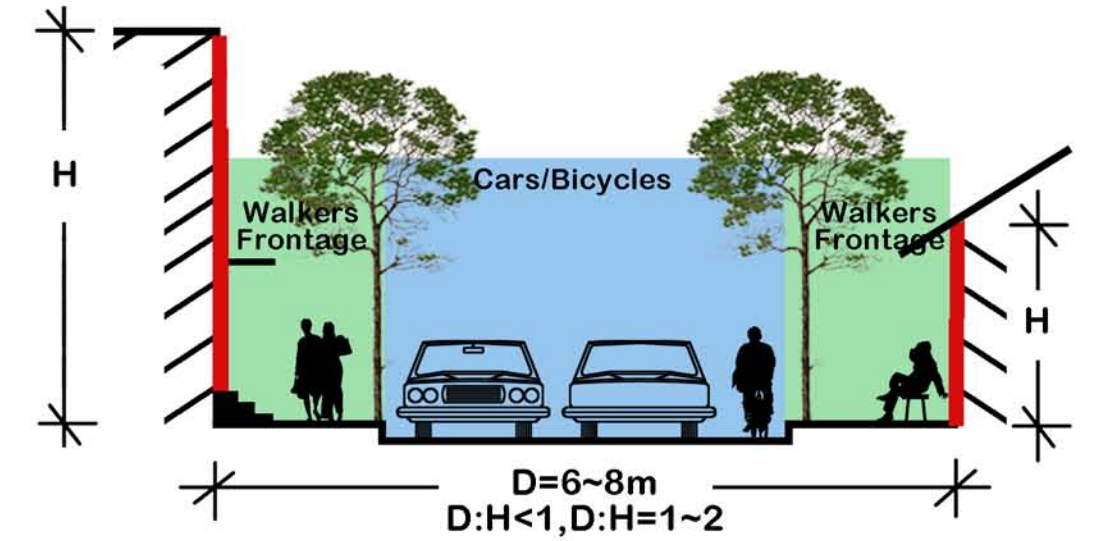


Use of Space
— Network Path — Interior Secondary Path — Interior Open Space
■ Renovated Buildings ■ Facility & Service



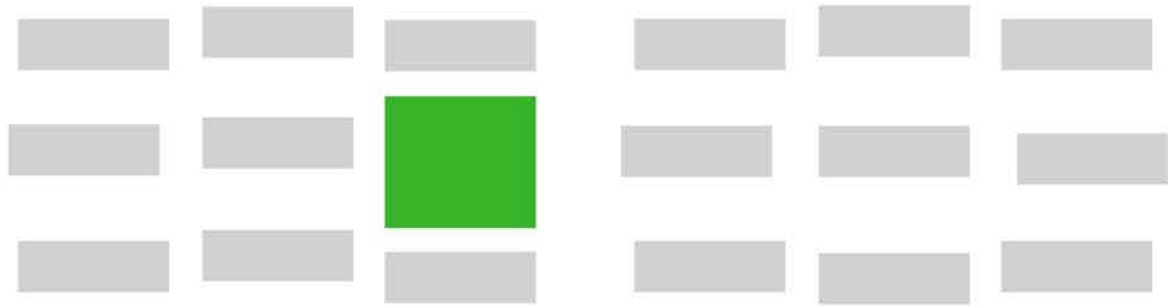
Main Interventions

In the Network Mosaic Settlement

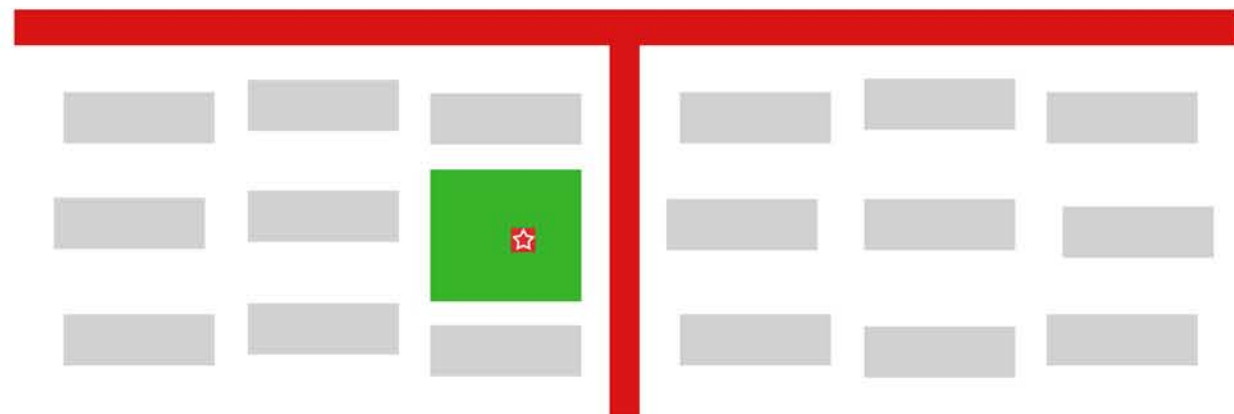


Giving an Order to the Space

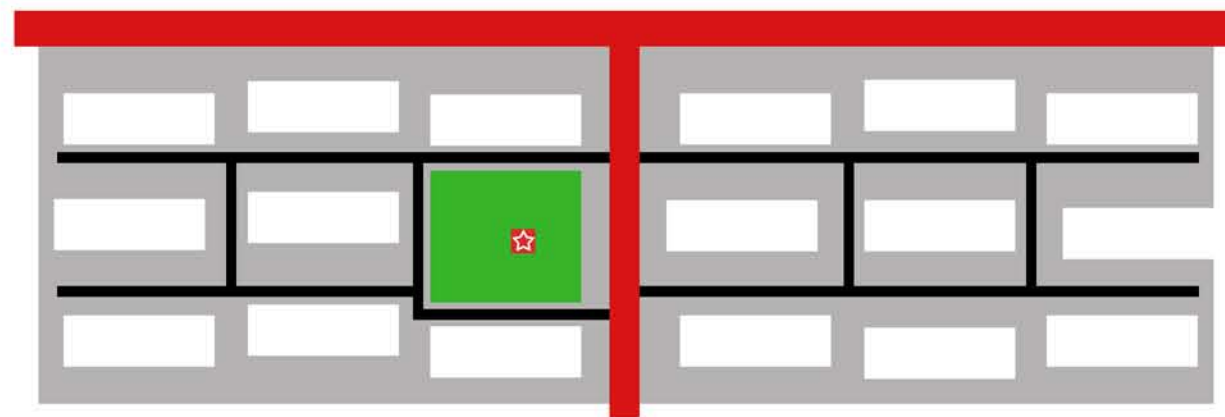
In the Network Neat Settlement



Original Pattern Planned with clear space in between and open space



Main Interventions Relating to the Walk-trip Network

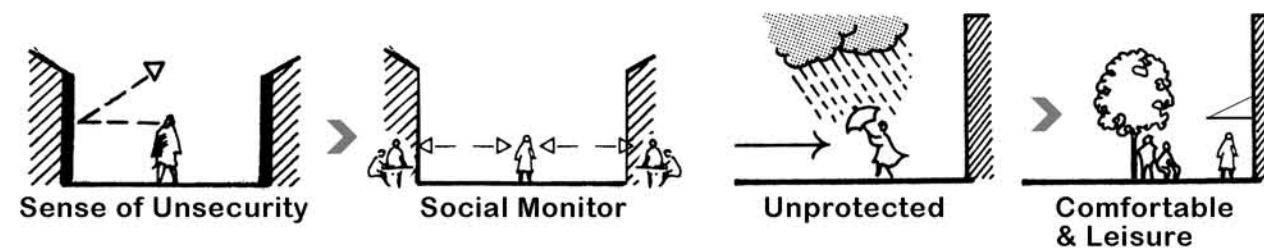


Vision Order and better relationship to the city. Sense of security, comfor and fun

In the Network Neat Settlement

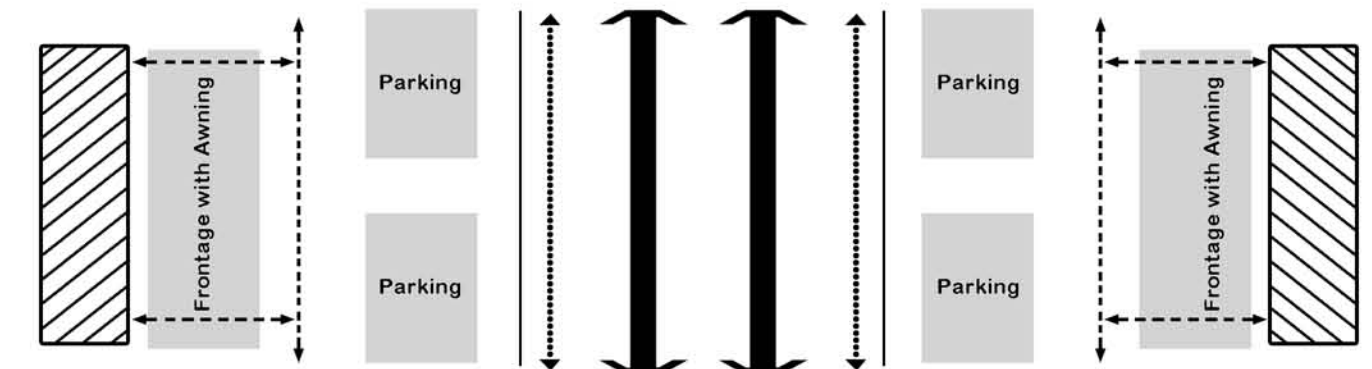
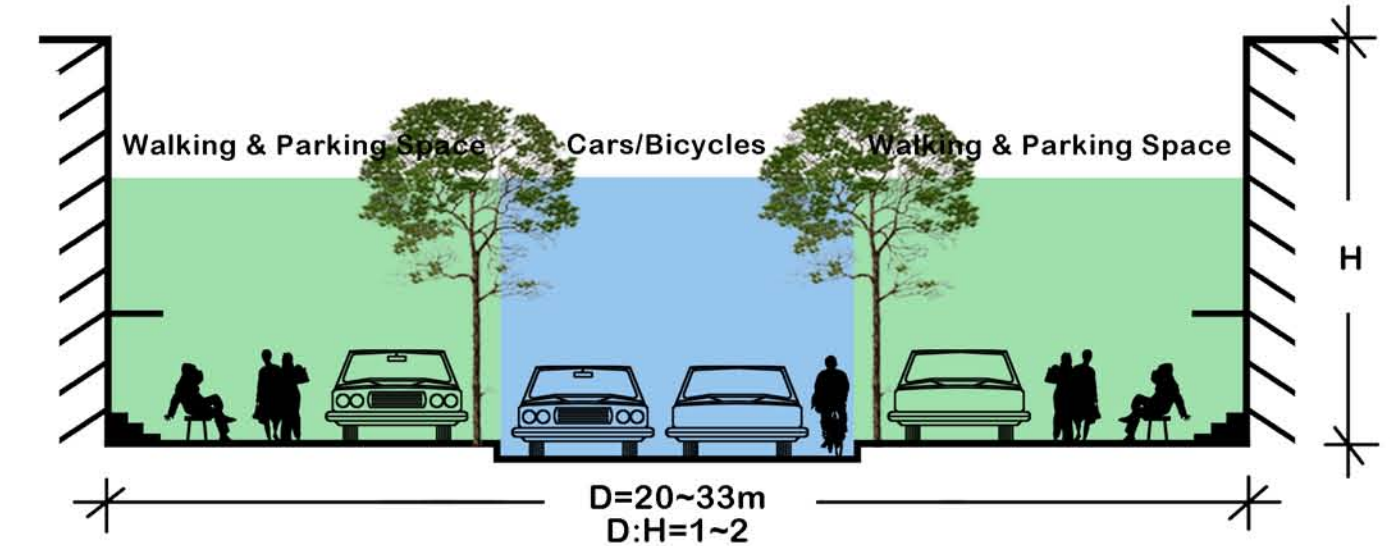


Use of Space
 — Network Path — Interior Secondary Path — Interior Open Space
 ■ Renovated Buildings ■ Facility & Service



Main Interventions

In the Network Neat Settlement



Section A — Vehicles — Bicycles — Walkers ■ Building



Giving the Space More Meaning and More Quality

In the Network

Green and Open Space



Use of Space

- Network Path
- Interior Primary Path
- Interior Secondary Path
- Interior Open Space
- Renovated Buildings
- Facility & Service

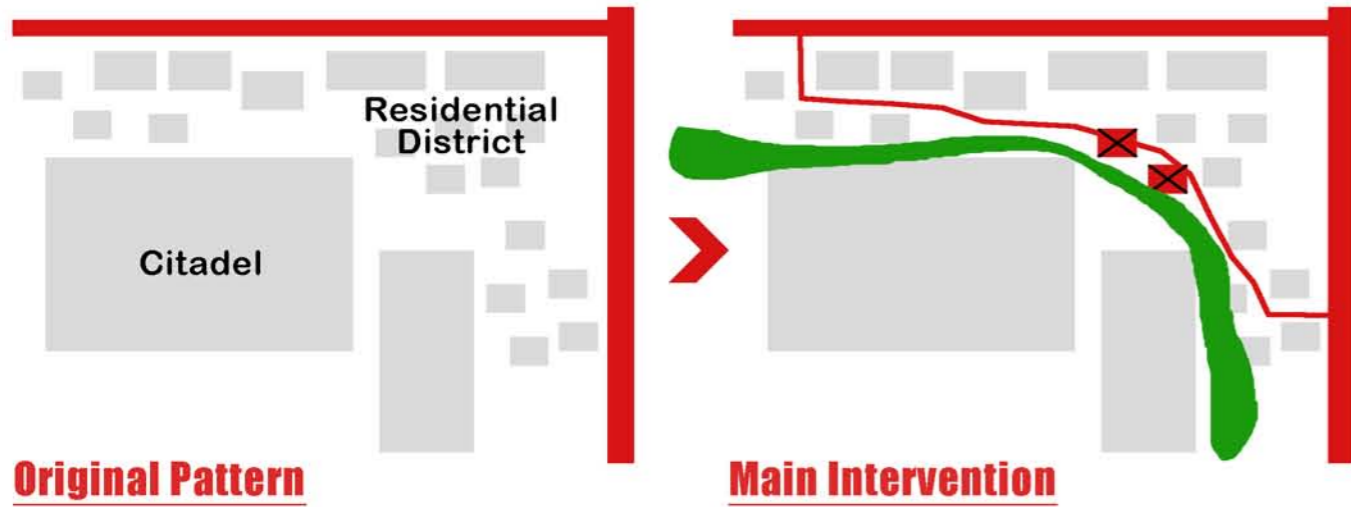


Peaceful Path



Meeting Place

In the Network Citadel



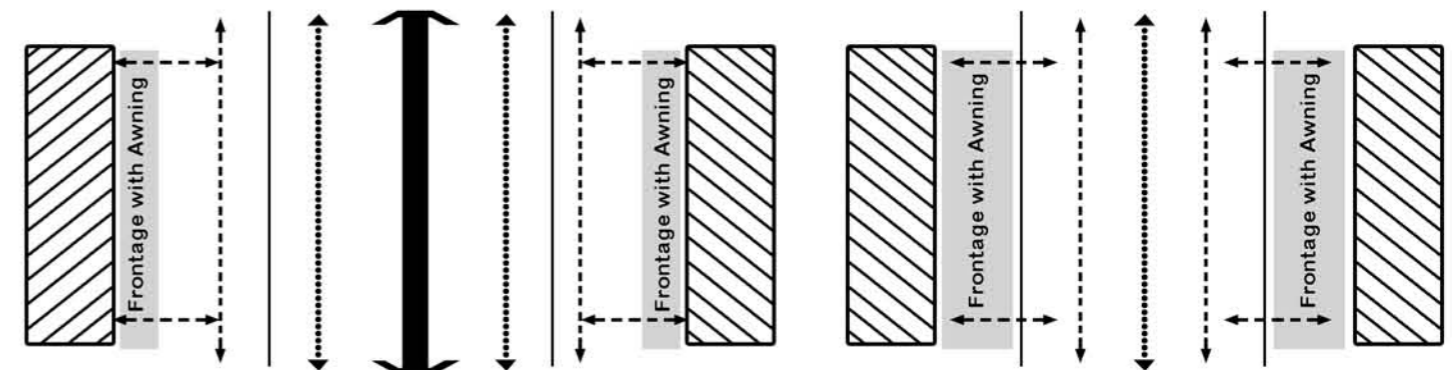
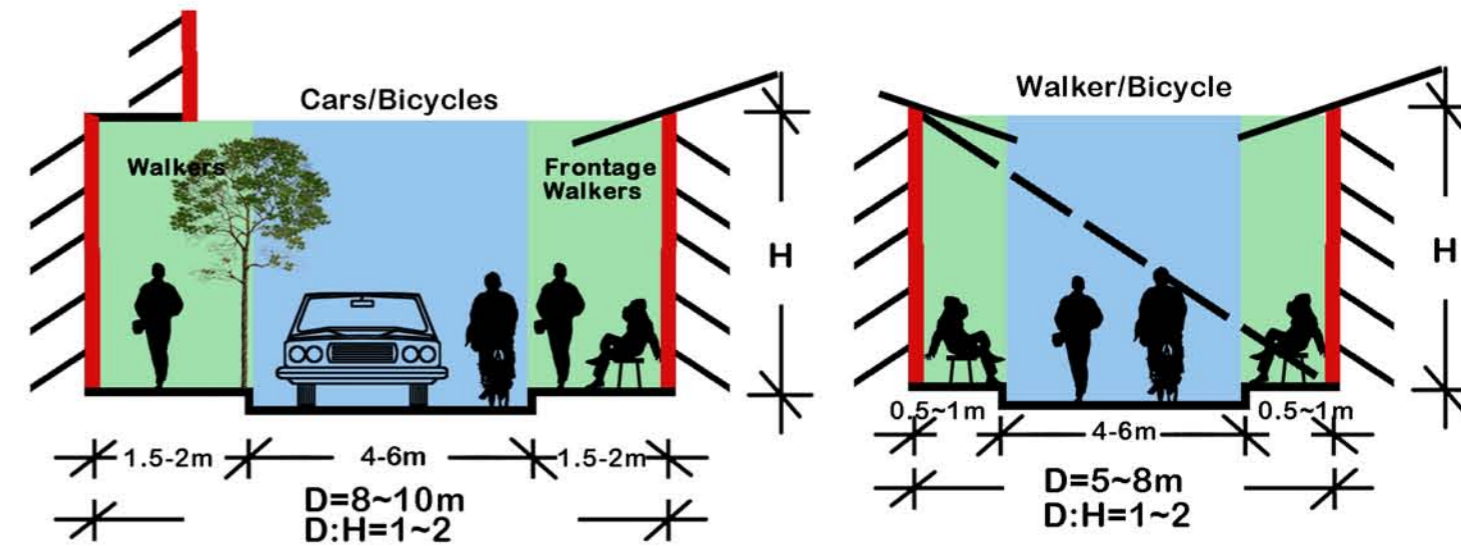
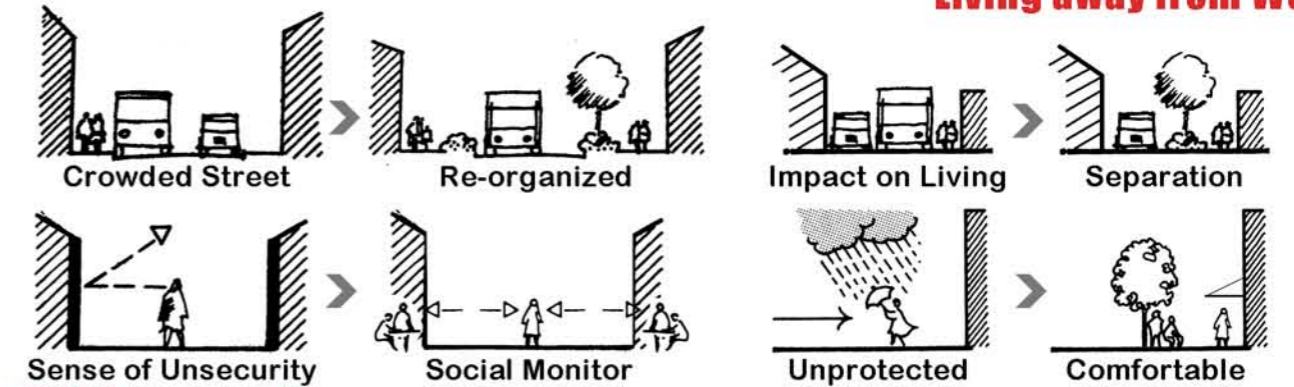
Use of Space

- Network Path
- Interior Primary Path
- Interior Secondary Path
- Interior Open Space
- Protecting Green Space

In the Network Citadel



Living away from Work



Section A

- Vehicles
- Walkers
- Bicycles
- Building

Section B

“A Walk-trip City”: Wuchang Historical Area, Wuhan, China

Introduction

Wuchang historical area is located at heart area of the city of Wuhan. The city of Wuhan is a very huge city at the intersection of the main river “Yangtze River” and its longest branch river “Han River”. These two rivers divide Wuhan into three parts: Wuchang, Hankou and Hanyang. Before 1927, each of the three parts developed individually and formed its own town with different characteristics. The historical area of Wuchang was also given to birth. After 1927, the temporary state’s government was transferred to Wuhan and combined three parts of Wuhan into one administrative unit whose name is Wuhan. Now the city of Wuhan consists of 13 districts including Wuchang district where Wuchang historical area is located. The total area reaches as large as 8484 square kilometers. In 2009, the number of inhabitants of Wuhan is 9,100,000. Wuhan is the largest central city in central and western part of China, one of the most important industrial bases, scientific, educational base and hinge city of transportation. **(Group Figure 1)**

Wuchang historical area is situated in the heart area of Wuchang district by the Yangtze River. The principal road of Wu Luo Road travels across the area leading to Wuhan 1st Yangtze River Bridge in the west and main parts of Wuchang in the east. Wuchang historical area was originally built as early as 223 A.D with a history of almost 1800 years. At present, Wuchang historical area is basically developed or extended outwards from upon where former walls were located. On the east and north side, Zhong Shan Road defines the boundary while on the west, it goes till Lin Jiang Road and on the south, till Xun Sihe Road. The total area covers about 7.68 square kilometers which is mostly used for residential areas and public service areas.

Wuchang historical area is very rich in historical resources. It has 2 national-class relic units, 23 province class relic units and 23 fine historical buildings as well as large area of special residential buildings with the presence of many cultural and natural resources including “Yellow Crane Tower”, Snake Mountain, Phoenix Mountain and Ziyang Lake. **(Figure 1)**

However, recent years’ development of large scale and intensity has dramatically changed the context and urban space of Wuchang historical area. Operations already done and undergoing have brought out many problems such as the decreasing quality of living in terms of space and over-consumption of the environment. Moreover, the present approaches of Urban Design in China are not helping at all to deal with the situation in that the approach of mass project which is too functional, too technical and too symbolic often leads to more serious problem of space for living in micro level. Different patterns of space are neglected. Instead, homogeneous projects are being done on and on. This paper, therefore, with an insight into the urban space and its users, further analyzes the use of spaces of different patterns in macro level and in micro level. Based on the analysis and conclusion from the analysis, it is then proposed a Walk-trip City, a city oriented at kind micro urban space for walking, staying and enjoying based on different features of spatial patterns.

1. Description of urban space in Wuchang historical area

1.1 Spatial evolution of the area

In order to understand the real situation and the features of urban space of Wuchang historical area, it is necessary to start from the history which will show the whole process of its development and imply the origins of some problems existing now. Going forward with the step of history, it is also possible to foresee some trends and predict the transformation undergoing which is significant to the complete comprehension of the whole area.

1.1.1 Background: urbanization history of China and Wuhan

As an ancient civilized country, China with long history of urban civilization is among the six areas that gave birth to early cities. What is more special, the civilization history of Chinese cities has never been interrupted and is still giving profound influences to contemporary Chinese cities. According to the characteristics of different urbanization periods, before 1949, which is the year of the birth of the new republic of China, the urban history could be generally divided into 5 periods: formation and early development period, early period of feudal society, middle period of feudal society, late period of feudal society and modern period. After 1949, the urban history falls into two periods: the slow urbanization process between 1949 and 1978 and the rapid urbanization process after 1978, which is the year of the opening up reform of China.

Before 1840, the history of Wuhan is actually the history of three independent towns. The original urban history of the city of Wuhan should date back to the “Pan Long Town” of Shang Dynasty which was about 3500 ago. Among the three parts of Wuhan, that are Wuchang, Hankou and Hanyang, Wuchang is absolutely the most historical one. Historically, each of the three parts of Wuhan was individually developing as a unit with its own spatial structure characteristics and differences from the others. Wuchang and Hanyang was built mainly based on the urban spatial model of late feudal society of China – square city outline with straight streets, commercial extensive areas outside city, using shaping to express an idea and the harmony between order and functions. Hankou was, however, built in quite a particular way because Hankou was not developed until modern commerce and port transportation became important and Hankou’s status became more and more important and undertook rapid development in a short time. In 1474, the route of Han River was changed to pass the north side of Turtle Mountain which is located also by Yangtze River in Hanyang. Hankou finally managed to develop separately from Hanyang as an independent part. Hankou soon became one of the most important and richest ports and commercial centre of the whole China.

During the period from 1840 to 1949, Wuhan developed into an important commercial port city. The signature of “Tianjin Treaty” in 1858 further open Hankou as well as Wuhan to foreign countries as a trade port, which gave Hankou more development and at that time, Hankou was called by foreigners as “Oriental Chicago”. Wuhan was becoming a half-colony. In particular, along Yangtze River concession areas of different countries were built and formed terrace residential areas in the residential district model. Oct.10th of 1911, the worldly known “Wuchang Uprising”

broke out in Wuchang and gave the very first shot of “XinHai Revolution” that ended the feudal domination of more than 2000 years in China. The next day, the uprising army established Hubei Government and declared to be independent from Qing Dynasty. The new government was named “Republic of China” and Wuhan became the revolutionary center of China. 1927 was a year important to the city of Wuhan because in this year, the government of Nationalist Party moved to Wuhan and combined three parts of Wuhan as a unified city administratively. Also in this year, the ancient walls of Wuchang historical area were demolished and instead, new wide roads were built basically along where previously the walls were standing.

From 1949 to 1978, it was a slow and declining period for Wuhan. May 16th 1949, the city of Wuhan was liberated. At that time, though the three parts of Wuhan affiliated to the same administration, the city was actually developing in separately three parts, that is, Wuchang, Hankou and Hanyang. During the first three years of economic recovery, the urbanization process was relatively fast mainly because of the industrial land development. In the “1st Five-Year Plan” of China, Wuhan was listed as the main investment city and especially the industrial investment arrived. New land development was occupied mostly by industries. For example, in Wuchang, four new industrial development districts were opened. What really brought great change to the spatial structure of Wuhan was the completion of 1st Yangtze River Bridge of Wuhan and Han River Bridge in 1957. These two bridges physically connected the three parts of Wuhan together. During this period, under the help of experts from Soviet Union, the main spatial development strategy was: to reorganize and unify the big city of Wuhan that has three big parts by European approach, that is, axis and square to form a unified spatial structure. After 1958, the development focus of the state was transferred to what was called “big three lines” areas, Wuhan was therefore excluded from the key investment list and Wuhan was developing very slowly. The function of Wuhan was too simple, structure was disorganized and the infrastructures were quite backwards. New growth was based on the old core areas and inner density became higher and higher. As a result of the failure of infrastructure supporting urban development, the spatial structure of Wuhan was very slack and in disorder which could be seen in particular in street network. Roads and streets were not under control and freely growing.



Photo 1 Spatial Evolution of the City of Wuhan in 1949(left), 1954(middle) and 1959(right)

After the year of 1978 when “Cultural Revolution” ended and the “Opening-up Reform” began, Wuhan has been on the road of adaption, transformation and exploration. As a matter of fact, Wuhan was historically a commercial city and tertiary industry was relatively more developed. However, during the 30 years from the birth of the new republic of China until the opening-up reform, the tertiary industry decreased about 25% and the proportion in GDP decreased about 20%. After the opening-up reform in 1978, Wuhan modified its development goals and strategies: city should function in various aspects and it is a must to promote the tertiary industry

development of Wuhan which will be also the pushing force of urban spatial development. In 1995, the master plan of Wuhan reflected the ideology of system to develop a city not only heavy industry but also primary and tertiary industries. The spatial planning of Wuhan for the first time raised the planning idea of “Multi-Center Settlements”. The plan proposed a horizontal axis composed of Han River and east-to-west mountains and a vertical axis composed of Yangtze River, together with green wedges to form radiating urban spatial structure. In the urban area, a multi-level system of one core - central districts, 7 peripheral districts and 4 satellite towns was planned. However, for many reasons, the development strategy of Wuhan is still not very clear with weakness in the consistence of history and insufficient consideration of the future. The planning of Wuhan has always been passive and left behind the real challenge.



Photo 2 Spatial Evolution of the City of Wuhan in 1978(left), 1987(middle) and 1995(right)

1.1.2 Spatial evolution of Wuchang historical area

Wuchang historical area was initially built during Three Kingdom Times (223 A.D) for the purpose of military defense in the northeast of Snake Mountain. The city was called Xia Kou City which was very small. In 825 A.D, a new arrived officer carried out a conversion project for the first time. The project lasted five years and was really huge. After the project, previous clay city walls were turned into brick walls which leveled up the defensive ability of the city and enlarged the area of the city as well. In the north, the city reached where it is now Sha Lake while in the south, it extended until Zi Yang Lake. The second time large scale conversion project that gave Wuchang historical area final form was carried out in 1371. The city was extended to a large degree towards both sides of Snake Mountain and includes the entire mountain into the city. The city was again enlarged to 20km in perimeter and the walls were made of clay bricks. They were very strong. The heights of walls vary from 7m to 10m around which there was the moat of about 3.3m deep and 7m wide. Along the walls there are 9 gates which is the typical number of gates of ancient Chinese cities. They are: Da Dong Gate in the east, Xin Nan Gate in the southeast, Bao An Gate and Wang Ze Gate in the south, Zhu Kuan Gate in the Southwest, Ping Hu Gate in the West, Han Yang Gate in the northwest, and Cao Bu Gate in the north and Xiao Dong Gate in the northeast. Afterwards some of the gates were renamed. (Da Dong Gate became Bin Yang Gate, Xin Nan Gate became Zhong He Gate, Wang Ze Gate became Wang Shan Gate, Zhu Kuan Gate became Wen Chang Gate, Cao Bu Gate became Wu Sheng Gate and Xiao Dong Gate became Zhong Xiao Gate). In Qing Dynasty, another gate was added, the Tong Xiang Gate, between Zhong He Gate and Bin Yang Gate. Ever since then until modern times, Wuchang historical area remained in this scale.

In 1926, during the “War of Northern Expedition of China” , the revolutionary army of

nationalists attacked Wuchang for about 40 days which damaged Wuchang a lot. In 1927, for the need of constructing Yue Han Railway, the walls of Wuchang were demolished except one small piece and the Qi Yi Gate (renamed for the revolution) in memory of the historical event of Xin Hai Revolution in 1911. Nowadays, the roads around Wuchang historical area were basically along previous walls, in particular the Zhong Shan Road. **(Group Figure 2)**

1.1.3 Spatial features and values in the view of history

The street network of Wuchang historical area developed from what was recognized as “One Vertical and Two Horizontal” with free street network inside in 19th century to the “Cross plus South Circle” street network in the first half of 20th century. Today, the street network of Wuchang historical area has been changed into “Big Circle plus Cross” model which is similar to grid street network.

Due to the presence of the Snake Mountain in the middle of Wuchang historical area, the city or the area has been divided naturally into two parts, the south part and the north part. The traffic flows are obstructed in south-to-north way while the pressure on the west-to-east is much higher. In general, the north part of Wuchang historical area has been mainly occupied by administrative organizations with high density and smaller blocks while in the south part, noble houses, ordinary residential areas, markets, ponds and even farming areas could be found with more relaxing pattern, larger blocks and low density

Originally, the building space was characterized by inner garden and big houses with high integrity. However, with the increase of population and some local plug-in projects in Wuchang historical areas, the spatial pattern has become more similar to modern residential district, co-existing with remaining historical residential areas and the density has been intensified very much. But the overall pattern of Wuchang historical area has inherited the ancient pattern of Wuchang.

Wuchang historical area was the place where many important historical events took place such as Xin Hai Revolution, Farmers’ movement of Wuchang. It is also a multi-functional area with various cultures. It has rich natural resources like Snake Mountain, Phoenix Mountain and Zi Yang Lake.

At the same time, Wuchang historical area has rich landscape resources of three types: special historical landscape, scenery landscape and modern landscape. The special historical landscape refers mainly to the historical residential area of Tanhualin with relatively complete pattern and look in the north part of Wuchang historical area. The scenery landscape involves mainly Yellow Crane Tower and 1st Yangtze River Bridge, the landmarks. Finally in the modern landscape, Hubei uprising government site, farmers’ movement lecture site and 5th Communist General Party site are the main significant elements of historical meaning.

1.2 Description of the urban space

In this part, space users and urban space are put together to be described because the description and comments of the urban space are based on users’ needs. Firstly, the features of users are presented. Then with an overview of the macro description of the urban space, the

paper goes deeper into the micro dimension with the tool of urban spatial pattern.

1.2.1 Space users

1.2.1.1 Description of space users in Wuchang historical area

By the end of the year 2009, the city of Wuhan has a total population of 8.36 million in 2.7 million families. That is to say, the average number of family member is about 3 persons. In the past 30 years, the population has always been increasing with a growth of about 100,000 people each year due to the immigrants from the nearby areas. Only in recent years the growth has become less. The data specifically on Wuchang historical area is presently not possible to find. Here the data is on the whole city of Wuhan as reference which can also give implications on the demographic features in Wuchang historical area. **(Table 1)**

In the population, people between the age 18-34 and 35-59 account for 33.5% and 38.4% respectively while people below the age of 17 accounts for 13.5%. People whose age over 60 accounts for 14.6%. In other words, the city of Wuhan as well as Wuchang historical area can be defined as an aging area with more and more middle age people. Another impressive phenomenon is the unbalance between male and female. There are more men than women.

Table 2 Ages and Gender Composition of Population

Item	Total	Male	Female
Total	8355473	4296751	4058722
0-17	1131254	617782	513472
18-34	2798967	1475397	1323570
35-59	3206632	1613492	1593140
60-79	1060137	527032	533105
80-99	157675	62855	94820
>100	808	193	615

Ever since the “Opening-up Reform” policy, the economic structure of China and the city of Wuhan has been changed dramatically with higher and higher proportion of secondary and tertiary industries. Consequently the occupational composition of the people has also changed. More and more people are working in secondary and tertiary departments. Especially in recent years, with the new transition of economic structure of China, the proportion of secondary industry has decreased while that of the tertiary industry has increased continuously. More and more people are going to the tertiary departments like services, financial organs or opening their own business. In fact, there are more people working in individual economy and private economy while less people are working in state-owned units and urban collective-owned units. The trend is becoming swifter in recent years. **(Table 3 and Table 4)**

Regarding the daily life of the people, an up going increase of personal income and living conditions can be seen. The average annual income and living floor area for each person have increased for more than 4 times in the past 15 years though the salary level in Wuhan is still

TABLE 1 NUMBER OF HOUSEHOLDS AND POPULATION

年 Year	份	总户数(万户) Number of Households(10000household)	总人口数(万人) Total Population (10000person)
1	9 7 8	124.28	548.29
1	9 7 9	126.53	558.36
1	9 8 0	129.53	567.23
1	9 8 1	135.46	577.90
1	9 8 2	139.43	586.97
1	9 8 3	143.16	594.40
1	9 8 4	146.82	600.59
1	9 8 5	151.33	608.39
1	9 8 6	157.00	619.96
1	9 8 7	161.88	629.34
1	9 8 8	167.93	641.72
1	9 8 9	173.62	653.26
1	9 9 0	178.83	669.75
1	9 9 1	184.76	677.03
1	9 9 2	188.23	684.46
1	9 9 3	190.89	691.69
1	9 9 4	194.20	700.01
1	9 9 5	196.34	710.01
1	9 9 6	199.17	715.94
1	9 9 7	201.28	723.90
1	9 9 8	205.43	731.79
1	9 9 9	208.71	740.20
2	0 0 0	213.66	749.19
2	0 0 1	218.66	758.23
2	0 0 2	224.59	768.10
2	0 0 3	229.91	781.19
2	0 0 4	241.58	785.90
2	0 0 5	249.95	801.36
2	0 0 6	255.45	818.84
2	0 0 7	260.46	828.21
2	0 0 8	265.00	833.24
2	0 0 9	269.90	835.55

TABLE 3

GROSS DOMESTIC PRODUCT AND ITS COMPOSITION OVER THE YEARS

Data in this table are calculated at current prices

年 份 Year	生产总值 (亿元) Gross Domestic Product(100 mil.yuan)	构 成 (%) Composition (%)			第一产业 Primary Industry	第二产业 Secondary Industry	第三产业 Tertiary Industry	人 均 生产总值 (元) Per Capita GDP (yuan/person)	
		第一产业 Primary Industry	第二产业 Secondary Industry	第三产业 Tertiary Industry					
1 9 7 9	46.20	6.62	28.51	11.07	100.0	14.3	61.7	24.0	835
1 9 8 0	53.44	5.84	34.53	13.07	100.0	10.9	64.6	24.5	950
1 9 8 1	56.29	4.59	36.64	15.06	100.0	8.2	65.1	26.7	983
1 9 8 2	63.31	8.64	38.42	16.25	100.0	13.6	60.7	25.7	1087
1 9 8 3	68.58	6.61	44.20	17.77	100.0	9.6	64.5	25.9	1161
1 9 8 4	83.75	11.93	50.74	21.08	100.0	14.2	60.6	25.2	1402
1 9 8 5	97.32	12.48	59.21	25.63	100.0	12.8	60.8	26.4	1610
1 9 8 6	106.35	13.82	62.11	30.42	100.0	13.0	58.4	28.6	1732
1 9 8 7	124.61	16.08	72.81	35.72	100.0	12.9	58.4	28.7	1995
1 9 8 8	156.44	21.89	87.93	46.62	100.0	14.0	56.2	29.8	2462
1 9 8 9	168.75	23.67	96.58	48.50	100.0	14.0	57.2	28.8	2606
1 9 9 0	176.83	27.50	92.04	57.29	100.0	15.6	52.0	32.4	2673
1 9 9 1	207.95	25.65	99.98	82.32	100.0	12.3	48.1	39.6	3088
1 9 9 2	255.42	30.44	122.56	102.42	100.0	11.9	48.0	40.1	3752
1 9 9 3	357.23	35.87	177.46	143.90	100.0	10.0	49.7	40.3	5192
1 9 9 4	485.76	44.01	242.62	199.13	100.0	9.1	49.9	41.0	6980
1 9 9 5	606.91	60.74	294.67	251.50	100.0	10.0	48.6	41.4	8609
1 9 9 6	782.13	71.61	366.19	344.33	100.0	9.2	46.8	44.0	10970
1 9 9 7	912.33	78.79	422.06	411.48	100.0	8.6	46.3	45.1	12673
1 9 9 8	1001.89	75.85	449.72	476.32	100.0	7.6	44.9	47.5	13765
1 9 9 9	1085.68	78.54	478.39	528.75	100.0	7.2	44.1	48.7	14751
2 0 0 0	1206.84	81.36	533.31	592.17	100.0	6.7	44.2	49.1	15082
2 0 0 1	1335.40	85.00	582.40	668.00	100.0	6.4	43.6	50.0	16515
2 0 0 2	1467.80	90.40	635.50	741.90	100.0	6.2	43.3	50.5	17971
2 0 0 3	1622.18	95.13	701.87	825.18	100.0	5.8	43.3	50.9	19569
2 0 0 4	1882.24	102.23	825.78	954.23	100.0	5.4	43.9	50.7	23148
2 0 0 5	2261.17	109.57	1026.27	1125.33	100.0	4.8	45.4	49.8	26548
2 0 0 6	2679.33	115.91	1205.42	1358.00	100.0	4.3	45.0	50.7	30921
2 0 0 7	3209.47	129.15	1440.00	1640.32	100.0	4.0	44.9	51.1	36347
2 0 0 8	4115.51	144.70	1867.21	2103.60	100.0	3.5	45.4	51.1	46035
2 0 0 9	4620.86	149.06	2142.14	2329.66	100.0	3.2	46.4	50.4	51144

Note:1.According to the new national economic accounted system ,the primary industry includes the added value of Farming, Forestry,Animal Husbandry and Fishery.

2.Per capita GDP was calculated according to average resident population from 2000.

3.Data from 2005 to 2007 are revised according to the second economic census.

TABLE 4 EMPLOYMENT IN VARIOUS YEARS

单位：万人

(10000 person)

年 份 Year	合 计 Total	城镇单位 从业人员 Staff And Workers	城镇单位 从业人员			个体经济 Urban Individuals	农村经济 Rural Individuals	私营经济 Private Enterprises	其他 Others
			国 有 经济单位 State- owned Units	城镇集体 经济单位 Urban Collective- owned Units	其他经济 类型单位 Units of Other Types of Ownership				
1 9 7 8	271.92	158.22	125.04	33.18		113.70			
1 9 7 9	280.17	166.12	124.58	41.54	0.33	113.72			
1 9 8 0	293.25	177.90	130.89	47.01	0.55	114.79			
1 9 8 1	305.64	190.05	138.54	51.51	0.90	114.69			
1 9 8 2	313.18	195.79	142.51	53.28	1.08	116.31			
1 9 8 3	319.77	201.86	148.27	53.59	1.95	115.96			
1 9 8 4	325.97	205.03	149.14	55.75	0.15	3.00	117.94		
1 9 8 5	335.81	212.55	154.41	57.96	0.18	4.04	119.22		
1 9 8 6	340.90	215.36	155.71	59.41	0.24	3.50	122.05		
1 9 8 7	348.30	219.50	159.95	59.29	0.27	3.96	124.84		
1 9 8 8	351.25	223.02	163.42	59.20	0.39	4.95	123.29		
1 9 8 9	355.15	224.99	165.32	59.07	0.60	5.86	124.31		
1 9 9 0	357.80	227.12	167.99	58.45	0.68	5.21	125.47		
1 9 9 1	360.24	230.15	169.78	58.72	1.65	4.62	124.62	0.85	
1 9 9 2	360.61	230.02	171.08	57.07	1.87	5.22	124.46	0.91	
1 9 9 3	374.92	233.58	173.23	53.53	6.92	14.89	123.42	2.93	
1 9 9 4	386.83	226.34	168.39	48.70	9.25	28.12	124.71	7.67	
1 9 9 5	398.64	222.30	166.71	43.27	12.32	37.48	128.51	10.35	
1 9 9 6	406.42	218.85	164.50	41.13	13.22	40.48	121.87	25.22	
1 9 9 7	411.83	216.44	161.91	40.61	13.92	45.76	121.41	28.22	
1 9 9 8	415.20	210.74	155.43	36.64	18.67	51.49	120.36	32.61	
1 9 9 9	417.78	206.89	150.49	33.80	22.60	54.15	121.44	35.30	
2 0 0 0	417.80	199.64	144.04	28.95	26.65	63.61	121.30	33.25	
2 0 0 1	406.12	192.96	138.52	23.18	31.26	59.67	120.33	33.16	
2 0 0 2	407.30	183.79	134.65	17.23	31.91	60.79	123.78	38.94	
2 0 0 3	412.00	176.24	117.49	13.85	44.90	70.04	127.99	36.80 0.93	
2 0 0 4	417.50	148.60	89.66	7.54	51.40	30.57	154.33	22.83 61.17	
2 0 0 5	421.80	148.53	90.05	7.86	50.62	42.77	148.90	29.20 52.40	
2 0 0 6	429.60	153.89	86.10	6.77	61.02	43.62	143.98	34.03 54.08	
2 0 0 7	442.20	159.58	83.61	6.94	69.03	61.14	145.60	22.78 53.10	
2 0 0 8	456.00	170.45	84.56	7.75	78.14	74.60	144.23	37.74 28.98	
2 0 0 9	468.60	175.84	80.36	7.78	87.70	90.11	143.47	38.45 20.73	

Note: 1. Staff and Workers in railway system are included in Staff and Workers.

2. The statistic range for self-employed individual and private employed persons has been adjusted since 2004 according to related regulation

3. The date is others item refers to flexibly employed persons.

4. Staff and workers have been changed into urban employed persons since 2004 in this table.

relatively low compared with the other advanced cities in the east coast.

Table 5 Main Individual Economic Indicators

Year	Income Level (euro)	Disposable income per capital (euro/month)	Expenditure for living cost (euro/month)	Living floor area (m ²)
2009	-	153.2	106.0	33.88
2008	2721	139.3	95.3	29.28
2007	2299	120.0	88.3	28.25
2006	1976	103.0	76.5	26.86
2005	1626	90.4	67.0	25.5
2004	1382	79.7	64.9	24.25
2003	1172	71.0	60.4	23.93
2002	1004	65.2	56.9	22.16
2001	908	60.9	52.9	9.65
2000	763	56.3	50.6	8.8
1999	709	52.2	45.4	8.5
1998	675	49.3	43.9	8.1

1.2.1.2 Users' features and their needs on urban space

Generally speaking, the urbanization process is surely to continue with high speed which means more and more people from the countryside will arrive in the urban area of Wuhan as well as Wuchang historical area. As a result of this, we will see another increase in population number though it may not be as high as the years at the beginning of this century. More people and more pressure and **diversified demands** will be brought to the city because not only the need of the residents should be considered but also the needs of the **new arrivers** should be also taken into consideration.

On the other hand, the scale of each family has fallen finally into 3 as a result of "Birth Control Policy" for many years which mean the basic social unit has been changed from what previously was a family of 2 or 3 generations. Today, more individual needs with more variety rather than standardized needs must be considered. In particular, **children's and young couples' need** must be given higher attention.

At the same time, the aging trend tells us an urban surrounding with more care for the middle age and **old people** is necessary. Urban space must be kind and comfortable oriented to the use of these people.

The new economic structure and occupational structure have given people in Wuhan as well as Wuchang historical area more freedom and flexibility in work. However, in Wuchang historical area, there are not many large units for work. The people work either nearby in small business or work at other places in the city. So for **working people**, their time during the day in the weekdays would be in Wuhan historical area. They have to commute every day from home to their

workplaces. For this reason, the accessibility and the comfort of urban space while travelling and their short-time leisure should not be neglected.

1.2.2 The urban spaces in macro scale: an overview of the urban space in the area

1.2.2.1 Natural conditions and environment

Wuhan is a city of lakes and water on Jiangnan Plain (one of the main plains in China). It is very rich and superior in natural resources. Wuchang historical area is situated by the Yangtze River opening to Hanyang District and Hankou District on the other side of the river. In the area, there is another famous lake called “Ziyang Lake” which is located in Ziyang Park. Most of the area is plain only except where there is the Snake Mountain across the area and the Phoenix Hill in the residential district. The Snake Mountain has been the symbol of Wuchang as well as Wuhan. On the mountain there are the Yellow Crane Tower, Which is the absolute symbol of Wuhan, and the Yellow Crane Tower Park. On the mountain, people can have an overview of the whole Wuchang, even the whole city of Wuhan. **(Figure 2)**



Photo 3 Yellow Crane Tower and the Snake Mountain

1.2.2.2 An overview of the urban space

As has been introduced before, the present urban space in Wuchang historical area is largely the product of geographical characteristics and history. Due to the presence of Snake Mountain, the area is naturally divided into two parts: the north part and the south part with Yangtze River and the new roads built instead of the previous walls as the boundary. In the north part, the urban space is still remaining old pattern especially in the central part. The parts along the river and the main roads have already been developed into commercial residences or other uses. On the other side in the south part, however, the situation is quite different. Because of the geographical location advantage, a large part has been redeveloped or under operations with different pattern from the old north part. What is interesting is that along Jiefang Road, which is historically the

road connecting the north and the south parts, the pattern of urban space remain more or less the same. Besides, the scale of the roads in the north and south parts are quite different too although the size of blocks or the density of roads is more or less similar. **(Figure 3)**

The structure of the urban space, therefore, could be summarized as “2 Parts”: the north and the south, “1 Axis”: Jiefang Road that connects the north and the south parts, “2 Scales”: the different urban scales particularly the roads in the north and in the south parts. Based on the features of the urban space and the use of space, the intensity of use of the space in the south is much higher than that is in the north. Especially along the main road space that connects 1st Yangtze River Bridge and the principal road of Wuchang, Wuluo Road. In fact, this area where two roads meet is considered the “Heart” of Wuchang as well as Wuchang historical area.



Photo 4 Typical Spaces in Wuchang Historical Area in the South(left) and in the North(right)

1.2.2.3 Uses of the urban space

In order to describe and interpret the situation and utility of space, it is first of all necessary to understand the present use of space. Based on the criterion of categorizing lands of Chinese planning, the land is divided into 14 categories: Residential Land, Commercial and Financial Land, Administrative and Office Land, Educational and Research Land, Cultural and Health Land, Green Space, Light Industry Land, Heavy Industry Land, Historical Places, Square Land, Parking Space, Municipal Facility Land, Water surface and Empty Land. **(Figure 4)**

As shown in the map, the majority of land is used as residential land in Wuchang historical area. The density in residential land is rather high especially in the north part. Most of these residential districts don't have a specific order or structure except some few new districts. Then there are many educational lands like university, technician school, middle school and primary school scattered in the area. They usually have limited land and are not capable fulfill the complete needs of a school. There are even some production land for industries though most of them are light industries that do not influence environment very much. In the southwest corner of the area there is the Wuhan Ship Factory which is absolutely a “super power” in industry in Wuhan and even in China. What is important is the service and facility land. Now along Jiefang Road concentrates a lot of shops and services like clothes shops though their scale is limited. In the other places the services and facilities are quite small and separate without the effect of scale. There are also some lands for administrations, small offices and cultural uses. Besides the Snake Mountain, there are few lands used for public green space in particular the public green space in the neighborhood. In the heart area, there is a grey area which empty and ready for an important

operations: Shouyi Museum which is for the 100th anniversary of Xinhai Revolution that broke out in Wuhan in 1911(it is the revolution that ended the feudal society and drove away feudal emperor of China).

From the point of view the users, most of their have not been satisfied. In particular, for some old residential districts, the basic facilities for living like house with basic facilities are not even possible. There is also an evident lack of public green space and squares for public activities and social relationship. With the scattered land, the management of these residential districts is also a difficult problem. Now people are getting richer and richer, so the land use should not anymore be too simple. Mixed uses for more entertainment, leisure and cultural activities are necessary. Children's space for playing must be realized. More land and spaces devoted to the uses for young people (especially those who are working in Wuhan but originates from the countryside) and old people.

1.2.2.4 Facilities and services

Specifically, in terms of the facilities and services, in Wuchang historical area there is no large shopping mall but there is a famous shopping street "Simenkou" which is along the Jiefang Road although Simenkou street offers mostly clothes shops. Most of the services are for daily uses like restaurants, groceries and small supermarkets and they are located along the streets on the ground floor of buildings. In the area there are many schools including one university of finance and politics, one college of music, one college of art, one research institute, 2 middle schools and several primary schools. Another national wide famous place is the "Hubu Local Special Food Street" that attracts people from the other parts every day. There is also a big hospital in the area, the People's Hospital of Wuhan University. **(Figure 5)**



Photo 5 Jiefang Road(left) and People's Hospital(right)

Due to the fact that there are many residential districts in the area, the services for basic living and more advanced and diversified services should be considered. There is a lack of entertainment and fashion place in and near the area. People have to cross the river to Hankou District for more diversified shopping and enjoyment. On the other hands, scattered school of limited land and space cause limited capacity and poorer quality of education and services.

1.2.2.5 The places

The “places” refer to the space in which some special meaning and events are related to. They are different with a sense of human relationship rather than abstract space. In Wuchang historical area, there are many places of historical events, cultural values and other social values. The main ones are:

Yellow Crane Tower: Firstly built about 1800 years ago, being protected as the national class human heritage, it is absolutely the physical symbol of the city of Wuhan. It is only a cultural and historical place with many memories but also a very famous tourist attraction to people all over China. Along with Yellow Crane Tower, there is the Yellow Crane Tower Park in which many valuable traditional buildings remain including Hubei Library at the foot of the Snake Mountain.

Xinhai Revolution Museum: In 1911, a worldwide significant event broke out in Wuhan here in Wuchang historical area: Xinhai Revolution, which finally drove emperor off the throne and ended Chinese feudal society of more than 2000 years. The museum was built in memory of this great event. This year, 2011 is the 100th anniversary of the revolution. A large project is going to be implemented. Up till now the Shouyi Square and Shouyi Revolution Gate have already been completed. By the celebration, another cultural area will be finished. On the square, there is the new theatre of Hubei Theatre.

In the north part of Wuchang historical area, there are more historical places remaining including Hubu Special Food Street, 5th Communist Party Meeting Site, Mao Zedong’s previous residence and the lecture site of the Agricultural Movement. There is another special residential district named “Tanhualin”. It is now preserved as human heritage as well because it concentrates large area of special residences of historical and architectural values.

Beside the places in the area, there are two other places that are quite important to Wuchang historical area: 1st Yangtze River Bridge and Wuchang Riverside Park. 1st Yangtze River Bridge was built in 1957 with the assistance of Russian experts. It was the first bridge built across the longest river in China. Together with Yellow Crane Tower, 1st Yangtze River Bridge is another symbol of Wuhan. It is not only a transportation tool for Wuhan but more importantly as a record of history of Wuhan. People who come to Wuhan usually reserve some time just for walking across the bridge. Wuchang Riverside Park is one part of the package project of “Beautification of the Riverbanks of Wuhan” as Wuhan has 3 towns with very long and impressive banks. Wuchang Riverside Park now is simply a green belt for walking. However, people living nearby, particularly the old people consider it as a place because they come here every day to have a walk, play chess and meet the other friends. A lot of their activities are related to the place. **(Figure 6)**



Photo 6 Shouyi Square(left), Tanhualin(middle) and Hubu Food Street(right)

In general, the use of the urban space in the places is still limited to the places themselves rather than the historical context. In another word, these places have been isolated with not limited influence and power. People cannot recognize them as a whole. Moreover, the quality of urban space in terms of comfort, walking and services around the places should also be improved.

1.2.2.6 Connectivity of the urban space

The connectivity of space determines to a large extent the accessibility and utility of urban space. In this sense, it is very important to study and analyze the connectivity of space of Wuchang historical area. The approach is mainly by looking at the presence of roads and roads' class and convenience. **(Figure 7)**

In a macro view, most parts of the area have good connectivity with clear distribution of roads of different classes. However, due to the presence of Snake Mountain, the inter-connectivity between north part and south part is not so convenient like in the other parts of the area. Moreover, in reality, there exists traffic congestion. In fact, the problem of traffic congestion is very serious along Wuluo Road, which is the principal road of Wuchang and connecting the 1st Yangtze River Bridge. The problem is even more serious at the main junctions, for instance, the bottleneck at the head of 1st Yangtze River Bridge.

In a more micro view, as a result of the disordered urban space, the roads and streets are not so regular and even not very clear. In some parts, strangers can often meet dead end and travel as in a maze. What's more, the presence of many fences and walls make the connectivity and accessibility even worse. On the road, the occupation of space is not usually as designated. Bicycles' path and sidewalk is usually occupied by parking cars. Pedestrians have to walk in the flow of vehicles.



Photo 7 Primary Road(left), Secondary Road(middle) and Small Street(right)

1.2.2.7 Legibility of the urban space

The "Legibility" of urban space is also a very important dimension to describe the quality of urban space. The concepts "imageability" and "wayfinding" used by Kevin Lynch are helpful to understand this dimension. Furthermore, by interviewing 20 people with different features, the paper uses the theoretical tool of 5 elements: paths, edges, districts, nodes and landmarks to see how users of urban space understand this area. **(Figure 8)**

At present, most of the main roads are considered by users as paths while some of them are even perceived as edges. These roads are with special functions involving Jiefang Road and Riverside

Road along with Riverside Park. The other edges are the Snake Mountain and the Ziyang Park. As has been described before, the pattern of space in the north and along Jiefang Road remains similar. The space around this area is considered as more or less a district though divided by Jiefang Road and Snake Mountain. In the south part, the sense of district exists at Wuhan Ship Factory and the University because they are autonomous and close to the public. As for the nodes, Shouyi Square is absolutely the central node with one node at Hubu Food Street, one at 5th Communist Party Meeting Site, and one at Tanhualin Special Residential district and another at Ziyang Park Gate. There are many landmarks in Wuhan historical area including the historical buildings and modern super buildings.

What we can obviously see is the missing of sense of paths with the space of districts, which is in the micro level, people cannot find the way. Generally speaking, the legibility of urban space in the north part is better than that is in the south part. There are more understandable things in the north like nodes and landmarks. Especially in the corner areas, it is almost non-legible.

1.2.2.8 Neighboring urban space

Due to the presence of the new modern wide and fast roads built around Wuchang historical area, the area is spatially separated from the neighborhood except the south corner residential district that has reached out from the historical area. Functionally, the area doesn't either have any direct relationship with the neighborhood since most of the neighborhood space is for living. However, the rebuilt Wuchang Railway Station is absolutely the super space around the Wuchang historical area. This station is the main passengers' station of Wuhan. Passengers of large quantity arrive and depart from the station every day and every hour. They mainly use Zhongshan Road and Wuluo Road as the mobility paths which bring a lot of pressure on the use of road space and the living space along the roads.



Photo 8 Wuchang Railway Station

1.2.3 The urban spaces in micro scale: use of spaces of different patterns

1.2.3.1 Urban road space

Urban Road refers to the space used as the main paths of connectivity. Its morphological feature is mostly linear and the use is for transportation. In Wuchang historical area, the Urban Road generally overlaps with the main roads. **(Group Figure 3)**

The uses of the Urban Road space are for walking, passing, riding a bicycle or a motorcycle, driving and doing shopping in the shops along the road space. The space is usually divided into 3 parallel linear parts that are for respective uses. However, in reality, the case is not so regular. The dominance of motorcars occupies most of the urban road space leaving very limited space for the other uses like riders and walkers. Along the roads, there are usually small shops and services at the ground floor of buildings.

The main users of Urban Road space can be anybody who either lives in Wuchang historical area or passes by. There are the residents and shop owners who live at the ground floor use the urban road space as their frontage space.



Photo 9 Typical Urban Road Spaces

At present, the priority is given to drivers and cars which lead to what functionally was designed for different users. Walkers' and riders' space has been overtaken. Walkers have to walk in the noises, smoke and in the danger of the rushing cars. They don't have enough space and necessary facilities to have a rest along the space. For drivers, they suffer too much from the traffic congestion. They also often worry about the parking. There's too limited space for parking in the area as well as in the other parts of Wuhan. For riders, the designed bicycle is always occupied so that they have to use buses and private motorcars.

In terms of the size and scale, the Urban Road space is too weak for users without a sense of safety because the roads are too wide (30-60m) and the buildings along both sides can't reach the height to create stronger sense of space. Then, the linear space is sometimes too dull without diversity of space shapes so that people have to walk and walk and it is not easy and comfortable to stay. Small nodes and squares are needed. Another problem is quite a common one in China. It is the loss of identity of space and worsened quality of space. Various kinds and styles of

buildings with all kinds of elevations stand on both sides of roads with no sense of integrity and with too many varieties. The disordered signs and advertisement boards everywhere also make the mess worse. In the end, the Urban Road space in Wuchang historical area is always too close in that the buildings stick to each other too close without interval leaving no openness to the other space. Users can sometimes feel depressed while moving in the space.

1.2.3.2 The different patterns of the urban space in the area

In order to explore the features and problems of urban space, in particular, the use of urban space by users, it is a must then to go deep into the urban space itself after a macro overview. With the concept of “Pattern”, the urban space in Wuchang historical area is divided into 6 patterns: Urban Village, Mosaic Settlement, Neat Settlement, Green and Open Space and Citadel. The main criterion is the morphological feature and the use of the space. Each of the 5 patterns has its own spatial elements, features, uses, way of uses and users. To analyze and give comments on each, the main standards are: functional satisfaction for all users, quantity satisfaction (size and scale to users), shape satisfaction and quality satisfaction (aesthetic quality, elevations, pavement and other spatial elements). (Figure 9)

1.2.3.3 Urban Village

Urban Village originates from the Chinese word that describes this type pattern: small, 1-2 floor old houses with very high density cluster together to form something like a village in the countryside. They usually have completely different pattern from the surrounding space. Morphologically, they are small pieces without specific order of space without even clear definition of road space. They are the products of history and urbanization. What used to be suburban areas are now urbanized. Some of the areas remained and grow into an Urban Village in the city. The use of space of Urban Village is residential. (Group Figure 4)

The composition of space is very simple. Besides the interior living space, there is the exterior space of frontage space and traffic space. However, the use of the space is also very complicated in that in this part of traffic space, many kinds of activities are carried out here such as walking, riding, driving and small temporary markets. The users are mostly local residents or better called as original residents (They lived here even before urbanization of the area).



Photo 10 Typical Urban Village Streets

The most evident problem of Urban Village is the functional problem. The residents only have very small area of living space without any other facilities like toilets and balconies. Their houses are directly facing the traffic path. They have to share the frontage space with the passers-by and they have to walk for some distance to the public toilets. They don't have sunshine in the rooms. Outside of the rooms, right in front of their doors, there is the mix-use space in which multi-activities are going on including walking, driving, frontage activities, selling and markets. Though to a certain point, the social interaction is more frequent here and the sense of neighborhood and "Street Eye" is stronger here, too many things mixed in the limited space can still create negative effects to users. At most the scale of space can reach 8 meters with buildings of 1-2 floors on two sides. Then the organization of space is too confusing with too many changes in shapes although the interaction and openness of space is attractive and interesting. Strangers sometimes can get lost while walking inside. In fact, the Urban Village space is quite comfortable in scale with a sense of safety, belonging and space giving not the too complex activities and poor quality of living and space. The sanitation condition is also problematic. The buildings and pavement are often very old and even close to collapse. There's a strong need of green in the space.

1.2.3.4 Mosaic Settlement

As implied by the word "Mosaic", Mosaic Settlement refers to the settlements with mosaic spatial patterns. They are neither a whole urban village of small pieces buildings nor a large district of homogeneous buildings. Morphologically, it is a spatial pattern of co-existence of various buildings in the proximate area forming the feature of the whole district. Functionally, it is mainly residential inside. Along the boundary of the settlement outside, there are usually shops and services. In some cases, there are empty space and green space inside though they often belong to some units which are not open to the public.

The use of space is even more complicated in Mosaic Settlement. The space is generally divided into two parts: the motorway and the mix-use space in front of buildings. The motorway space is for both driving and riding. On the other hand, the mix-use space in front of buildings can be used as frontage space, walking space, selling space, temporary market space and parking space. The users are the local residents living and workers who work in the units in the settlement.

(Group Figure 5)

As for the uses in motorway space, there is a lack of parking space because at present the sidewalks are occupied for parking. In front of the buildings especially the small old houses, the frontage space takes too many responsibilities giving limited space for each use. Again, walkers' interests must be satisfied. Regarding the scale of space, users can feel safe and comfortable here but due to the presence of too many elements in the space, the sense of space can be weakened. The structure of space is the main spatial problem. But in Mosaic Settlement, the potential to transform the space to be better off is high because it is not like in the case of Urban Village without adequate space to change. It has many options to have various attractive spaces. The space in Mosaic Settlement is also quite open to the users.



Photo 11 Typical Mosaic Settlements

1.2.3.5 Neat Settlement

Unlike Urban Village and Mosaic Settlement, Neat Settlement is the settlement with relatively clear spatial order and neat space in between spatial elements. It's morphologically featuring in more regularity compared with the previous settlements. The main spatial elements are the buildings, small open spaces like squares and sport fields, green spaces. Neat Settlement is generally for integral use like education, research and some newer residential districts.

As there is enough space, the use of space is also like that is in the other patterns. The use is also quite "neat" with clearer division between different spaces for different uses. There are no mixed uses in the settlements either. The motorway space is for driving and riding while the sidewalks which are wider than usual are used for walking and parking. At some places, there is the green space in the middle of space with other space around. Along the main roads that define the settlements, there are shops and services of larger scale. The users, however, are more complex including students, teachers, workers who use the spaces in the university. There are also people who live in the settlements where their houses are provided by the university or research centre.

(Group Figure 6)

The quality of space in Neat Settlement is generally higher with more complete facilities and higher standard of environment. However, though the space is neat, it is still not organic enough in that all the buildings are just put in a more regular way without more consideration as a whole. It needs better organization of space. The settlements have kind scale to users and variety of shapes and contrast of spaces. In terms of buildings, most of them have similar style, texture and color, therefore, the sense of unity is stronger though sometimes there is only unity without variety, which seems dull. Then, as there are many green spaces in the settlements, they should be better utilized because at present they are more or less underused for the reasons of design, location and policies.



Photo 12 Typical Neat Settlements

1.2.3.6 Green space

In this spatial pattern, there are 4 types: the green and open space related to Snake Mountain, the green and open space along Riverside Park and Yangtze River, the green and open space in Ziyang Park and finally the street green space in the neighborhood. These 4 types differ from each other in morphology as well as in the scale and users oriented.

However, all the 4 types of green and open spaces are mainly for leisure and activities related. Only in the space of Snake Mountain, due to the presence of Yellow Crane Tower and Shouyi Square, the green and open space is also for gathering, social activities and tourist activities. The composition of space is mainly the natural space and the paths and squares. The users are different depending on the types. In the green and open space at Snake Mountain, the users are people from the whole city, from the other cities and even from the other countries. The same situation is also for the green and open space in Riverside Park though there are more users from nearby. In Ziyang Park and the street green space, however, the users are mainly local residents.

(Group Figure 7)

In terms of uses, the green and open space in Snake Mountain is too much symbolic towards the celebration of 100th anniversary of Xinhai Revolution. What's more, as entering the Yellow Crane Tower is expensive, the green space is not so well used. In Ziyang Park, the space is too enclosure with only two gates to the neighborhoods. Then, what is more needed is the street green space which is small but useful for people's daily life. Unfortunately, not more than 4 street green spaces can be found and most of them are built for the sake of some famous places.





Photo 13 Green and Open Spaces: Wuchang Riverside Park(upper left), Snake Mountain Park(upper right), Street Green Space(lower left) and Ziyang Park(lower right)

1.2.3.7 The citadel

Citadel refers to the space created by the super buildings. In Wuchang historical are, there is only one super place: Wuhan Ship Factory, one of the most important industries of Wuhan. Morphologically, it is organized according to the production process and needs.

The composition of space is quite simple, too. Besides the necessary interior pathways and green space, the other space is for production, both outdoor and indoor. The path of transportation is mainly by roads and by ship. Naturally, the users are the workers in the factory. However, there are two residential settlements very close to the factory. **(Group Figure 8)**

For the sake of impossibility to enter the factory, it is difficult to tell the interior quality of space though it is also not very necessary to. But there is one question surely should be answered: the pollution, both to the nature and to the neighborhood. Especially, the interests of the residents close to the factory must be considered. Actually, the main problem for them is the noise and the dust created during the process of production.



Photo 14 the Citadel: Wuhan Ship Manufacture Factory

1.3 Transformation of the urban space in Wuchang historical area

1.3.1 Transformation undergoing

In recent years, the city of Wuhan is under great transformation. The State has approved the proposal of “1+8” and the experimental reform zone of “2-featured city”. The proposal “1+8” means a regional cluster of cities centralized by the city of Wuhan surrounded by 8 smaller classified cities and towns. “2-featured city” refer to the construction of a city which is kind to the environment and energy-saving. In 2010, the new master plan of the city of Wuhan has also been approved. What is really important is that the city of Wuhan has been re-defined as the “central city” of central part of China instead of “an important city”. This means great improvement of policy environment of Wuhan. With the opportunity, Wuhan has accelerated her step of construction. Now there are 5000 projects undergoing in Wuhan at the same time. Many of these projects are very important infrastructures including subways, tunnel across the Yangtze River, 3rd Ring, bridges and many urban roads and road junctions.

The leaping model of fast development of large scale is creating challenge to the historical context of the city. Wuchang historical area, which is located at the heart position of Wuhan, is also suffering from the challenge. In the coming several years, it would be a very important period for Wuchang historical area because many big projects are going to be located in and near the area.

In the following, the main operations undergoing and planned are introduced briefly. They are: Master Plan of Wuchang Historical Area, Shouyi Cultural Area Plan, New Subway Lines and Stations, New Road Projects, Wuchang Central Business District, Baishazhou Urban Industry Area and other small plug-in projects. **(Group Figure 9)**

1.3.1.1 Operations in Wuchang historical area

For the 100th anniversary of Xinhai Revolution, the Master Plan of Wuchang Historical Area has been completed based on the memory of Xinhai Revolution and historical events related to revolution. One cultural axis and another ecological axis are planned to connect the main elements. The master plan also re-organizes the land use and the main roads. It further re-divides the area into five functional districts: Shouyi Historical and Cultural District, Snake Mountain Ecological District, Tanhualin Special Residential District, Red District of Revolution near Agricultural Lecture Site and the Commercial District along Jiefang Road. The Master Plan involves a package of new projects and renovation projects costing as much as 12,568,000 Euros as reported. One of the main projects is the Shouyi Cultural Area.

The aim of Shouyi Cultural Area project is to create a new landmark of large square symbolizing Xinhai Revolution, create a special cultural area, to use the cultural resources of Xinhai Revolution and to present the city of Wuhan together with the spirit of “Dare to do” of Xinhai Revolution. Shouyi Cultural Area is at the heart position of Wuchang historical area. The total area is about

178.45 ha. The project utilizes five main resources: Snake Mountain and Yellow Crane Tower, Xinhai Revolution Museum, Shouyi Square, Ziyang Park and Xinhai Revolution Gate. Through the construction and organization of Shouyi Cultural Area in the middle, all the 5 functional districts will be presented as a whole. **(Group Figure 9)**

There are also other plug-in projects which are smaller. Most of them are along the main roads or at the intersection of main roads and on Jiefang Road concentrates more of them.

1.3.1.2 Operations around Wuchang historical area

According to the Road Network Plan, the city of Wuhan will establish the framework of “5*5”: 5 main horizontal roads and 5 main vertical roads to reach the goal of arriving any point of the city with 30 minutes. What’s more significant is that in total 12 subway lines will be done based on the 3 lines undergoing. By 2017, the total length of traffic construction will be 215.3km with an increase of 142.6km. This means the whole city will be covered by the new network.



Photo 15 Road Network Plan of the City of Wuhan

Wuchang Central Business District planned involves large area of Wuchang with an area of about 21 k m² among which 278.5ha will be used for construction. The whole CBD is divided into central area and main expansion area. The north part of Wuchang historical area is also involved in the main expansion area which means no direct intervention will be put in Wuchang historical area. The new CBD will spend 10 years to attract the most famous companies around the world, mainly focusing on finance, commerce, IT, hi-tech and tourism.

Baishouzhou is situated to the south of Wuchang historical area in between the inner ring and middle ring of Wuhan. The total area is 8.6 k m². This area, which is mainly for productive industries, is one of the 9 main new economic growth belts assigned by the government. It has

good advantage of transportation. It is planned that based on the existing enterprises and industrial structure, it will be developed in 5 main industries: production of electronic devices, processing of materials, printing and packaging, gas and chemical and food production in 5 main industrial gardens.

1.3.2 Implications and Critics

In general, the main transformations or challenges come from the 3 big operations: Master Plan of Wuchang Historical Area including the project of Shouyi Cultural Area, new subway lines and stations and the construction of the super districts of CBD and industries. The appearance of Shouyi Cultural Area in future will surely be presenting as the central and hottest spot of the whole Wuchang historical area. The organization of urban space will probably be based on this area as planned by the Master Plan. On the other hands, around the edges of Wuchang historical area, there will be several stations of subway completed. This means some other hot poles will appear in that a lot of concentration of investment and construction will be around these stations, bringing transformation of urban space. What's more, through these stations, more people will arrive in both as travelers and as new settlers because the convenience of mobility here. The plan and completion of Wuchang Central Business District and Baishazhou Industrial District will cause great changes in urban space along the riverside because these two super places have high attraction and concentration. In a sense, urban space in Wuchang historical area will be weakened with the rising of skyscrapers in these two places. Besides, the negative from the industrial district must be considered.

The urbanization process of China and the city of Wuhan will surely continue for long which means more population will arrive in the city. As a matter of fact, though the main users in Wuchang historical area will remain still the original residents, the new arrivers will also contribute more and more as a result of urban renewals and commercial investments. Gentrification and segregation may also be happening though at present these two phenomenons are not yet obvious like in the other global cities. Therefore, the benefits of ordinary people, especially the low income people must be considered more.

2. Interpretation of the urban space in Wuchang historical area

In general, the urban space in Wuchang historical area could be summarized as: **“a historical area divided into 2 parts by Snake Mountain with rich natural and cultural resources, an area mainly for living with relatively poor interior organization and partial legibility of urban space, a changing area with more spatial problems in micro level.”**

2.1 Repetition of spatial patterns in the city

The spatial patterns identified in Wuchang historical area are not the unique. In fact, in the city of Wuhan as well as in the other cities of China, similar spaces of these patterns can be easily found.

As the figures show, in the three parts of Wuhan, the patterns of urban village, mosaic settlement, neat settlement and green and open space almost represent the main morphological features of settlements. In Hanyang District there are more urban villages while in Wuchang District and Hankou District, mosaic settlements and neat settlements are the main patterns. **(Figure 10 and Group Figure 10)**

In this sense, the attitude and approaches we use to treat the spatial patterns of different characters is not only a matter of Wuchang historical area, but more significantly, a matter that influences the whole city as well as the other cities of China. It is, therefore, very important to realize that our city's growth must be based on the historical context represented by different spatial patterns.

2.2 Current Approaches and the urban planning and design in China today

Urban planning and design of China was for long the direct reflection of state's economic plan under central planned system of economy after the birth of the new republic. The urban planning was the mirror of state's development strategies with strong policy character. After the end of Cultural Revolution, Chinese urban planning finally stepped into a new era. However, Chinese urban planning was rather backwards until the birth of “Urban Planning Law” in 1989 which symbolizes the legalization of Chinese urban planning system. After 1990, with the establishment of Market Economy and the process of globalization, the development of cities and urban planning of China has been on the fast track. In the new century, the whole nation is experiencing a process of over-development and over-exploitation of cities. In 2006, the state has defined the direction of Chinese cities: energy saving and environment kind.

Current Chinese urban planning system involves three primary dimensions: Legislative System, Administrative System and Work System.

Legislative System: it includes laws, regulations, and norms. “Town Planning Law of People's Republic of China (TPLPRC)” is the base of legislative system of urban planning of China.

Regulations refer to the supplementary regulations supporting “TPLPRC”. Norms are the technical standards that aim at unifying the main concepts and definitions. They are the primary criterions of urban planning of China in common.

Administrative System: it includes the vertical system and the horizontal system.

Work System: it includes the mainly the Master Plan, Regulatory Plan and Detailed Constructive Plan as well as the implement system and the management system.

However, as a matter of fact, China doesn’t have its own urban planning and design theories. The historical “planning” of cities were actually the product of feudal hierarchy under imperial power. As a result, though there is the law framework, there is weak base of modern urban planning theories and practice experiences. Modern Chinese urban planning and design originates directly from western countries both in theories and in practices. At present, Chinese cities and Chinese urban planning and design is still in the elementary process of “borrowing ideas”, learning from western countries while at the same time exploring its own proper way of urban planning and design.

The main western theories and practices that influence Chinese urban planning and design are “Regional Cities”, “New Urbanism” and “Developing Park”.

Regional Cities: in the process of industrialization and urbanization, the central cities are becoming more and more important. The planning is not limited in the scale of the city itself but the region it can serve.

New Urbanism: urban planning and design of China favors “New Urbanism” which is featured, in Chinese cities, by compact, proper density, mixed land use, public transport dominating, streets for walking and flexible buildings. However, theories are not always applied properly.

Developing Park: today in China, one of the most important practices is the construction of various parks like industrial parks, scientific parks and universities.

Therefore, in Chinese cities of special nature different from western cities, where the history, customs, theories and practical experience are rather weak, western urban planning theories and practices are functioning as the main tools. Naturally, though they have relatively complete legislative framework, there are various problems and difficulties in practice, in particular small cities and towns. In short, Chinese urban planning and design have the main problems as following:

Urban planning is losing the control over cities. Either cities develop too fast and the timetable in the plan is often left behind, or the implementing of plans is far behind plans in that the infrastructures are often reconstructed time after time without coherence.

City and countryside are separated with a mess at where two of them meet. There are still no specific urban regulations on suburban and countryside area. Usually, these meeting area are in extreme disorder.

Too many special developing areas, autonomous and independent from the city. Various kinds of industrial areas, scientific areas, and tourist villages can be planned separately and the master plan of city is deconstructed.

Historical areas and buildings are seriously damaged and destroyed. In general, in the history of China, historical heritages suffered from three times damages of large scale. The first is the early period after liberation when industry was the main goal of the whole nation. The second time is the “Cultural Revolution” and last time is actually the period that we are experiencing. The slogan of “Renew the old cities” has taken away numerous valuable things and memories.

Loss of identity of cities. All the cities are in pursuit of big projects, new projects and landmarks. Western architectural buildings are transplanted everywhere. Wide roads, large grassland and luxurious government offices are built instead of social houses for lower income people.

2.3 The missing point and the focus

It can be obviously seen that the problems related to the urban space in Wuchang historical area lie both in macro level and in micro level. However, the current approaches of Chinese urban planning and design are still not matured and limited or concentrated mainly on macro level. They use mass projects of homogeneous styles to treat diverse spaces of different patterns rather than consider them as valuable individuals. These projects and operations are usually too functional, too technical, too fast, too macro and political with heavy influences from western values of urban planning and architecture.

The reality is, it doesn't matter we admit or not, that the city is a large organic system. We should never treat its organs with our own idea but based on the features of each. In terms of space, the whole area of Wuchang historical area consists of many different types of patterns which different values and problems can be identified. It is not wise to accept or deny them all at a time as what the current approaches intend.

To a greater significance, we can discover in other parts of the city of Wuhan, the patterns identified in Wuchang historical area can be easily found elsewhere. The repetition can be even seen in other cities and in whole China. Therefore, in this sense, the spatial problem in Wuchang historical area is not only problem locally, but more importantly a problem of all the Chinese cities.

As an attempt, this paper is aimed at improving the micro use of space based on different features of different spatial patterns

2.4 The vision of Wuchang historical area and the concept: “A Walk-trip City”

How to improve the micro use of space based on different patterns in Wuchang historical area? How to organize them? What Wuchang historical area should be like? Or in a broader sense, what a city similar to Wuchang historical area should be like? What a city should be like?

Reflecting the overall history of human cities, Chinese cities and western cities, there are some indications we can catch related to the criterion of a good city in the future.

The recognition of human selves. From the initial cities for religion and for few governing classes, cities are becoming more and more democratic. People are more and more self-conscious. Cities in the future must be based on the majority of people rather than few groups.

Compact cities and improvement of quality of space rather than increase of size. The size of cities has been becoming larger and larger from a village to an industrialized metropolis. However, according to the experience of western cities and current problems in Chinese cities, the urbanization process will sooner or later be slowed down and the cities will be oriented at the improvement of interior quality instead of growing like a cake. Cities must be qualified compact.

Emphasis on human scale and human needs. Cities in the past were designed for religion, in another word, for human spirits. They are kind to people though in other aspects they have problems. Besides, these cities created a sort of environment suitable for living. It is the essence of a city and what exactly people need. Modern cities are diversified, rich, efficient and fast but they are losing the essence. Human scale environment is disappearing especially in rapid developing places and countries like China.

Organic cities. Cities are becoming more and more complex. Unlike in the past, cities are independent from each other with small sizes. Today, cities function in numerous aspects like an organic creature with close relationship with its surroundings and other cities. No longer can they be simply described as machines with few words. Therefore, cities in the future must be considered as an organic part of its surrounding.

On the other hand, in the research of Kevin Lynch on good cities and good city forms, historical city forms are presented and he also attempts to offer his own understanding on ideal city forms and criterions including “Livability”, “Feelings”, “Suitability”, “Accessibility”, “Control” and “Efficiency and Fairness”. All of these values can be, in my opinion, should be applied to a good city especially a city like Wuchang with long history, rich diversities of patterns and cultural resources.

Based on the analysis of the general features of a good city and the analysis of the features and problems of Wuchang historical area, the vision or the goal of Wuchang historical area is becomes clearer: **“A compact city of human scale to satisfy human needs based on existing space and patterns with high quality of micro space and with organic relationship to the whole city, a “Walk-trip City”.**

2.5 Strengths and weaknesses in being a “Walk-trip City”

STRENGTHS

- 1) Good macro accessibility in the city.
- 2) Plenty of historical places and memories represented by Xinhai Revolution.
- 3) Rich natural resources including Snake Mountain, Yangtze River, Ziyang Park and Phoenix Hill.
- 4) Remaining of the historical axis of Jiefang Road as the main connection of the north part and the south part, now as a famous shopping street for clothes.
- 5) Good spatial connectivity in macro level.
- 6) Existence of present landmarks and nodes and sense of partial legibility.
- 7) Users’ memories and love on the land.
- 8) Good sense of space and safety in some patterns.
- 9) Better conditions in Mosaic Settlement and Neat Settlement.
- 10) Existing green and open spaces.

WEAKNESSES

- 1) Disorganization of urban space particularly in micro level.
- 2) Lack of diversities in land use and services.
- 3) Lack of public green space in the neighborhoods.
- 4) Separation of places as single dots. System is needed.
- 5) Weak accessibility of space inside settlements.
- 6) Lack of sense of paths and legibility in some large part.
- 7) Separation from the neighboring space.
- 8) Walkers needs are neglected
- 9) Mixed use of road and parking problem.
- 10) Presence of urban village which is difficult to deal with.
- 11) Re-organization of Mosaic Settlement to be better off.
- 12) Problem of space quality: aesthetic, identity, scale, variety, buildings, pavement, trees and signs and the other elements.
- 13) Traffic congestion.

2.6 Opportunities and threats in being a “Walk-trip City”

OPPORTUNITIES

- 1) 100th anniversary of Xinhai Revolution and a package of projects.
- 2) Master Plan to re-organize the macro space, land use, road network.
- 3) More investments and more diversity due to the good location of the area.

THREATS

- 1) Question on how to organize and design the urban space to make it as a whole in the historical context after the big transformation.
- 2) More traffic pressure and more people.
- 3) Challenge to satisfy more diversified needs of various users: original residents, new arrivers, young couples, old people, children and the working class.
- 4) Impacts brought by the CBD and the industrial district.

2.7 The framework of “a Walk-trip City”

The essential aim of the “Walk-trip City” is simply provide a place where people can walk safely, comfortably and happily. Therefore, the main task is to establish the walking network, Walk-trip network, to support the function and the aim. This very network will be the framework of the Walk-trip City.

The Walk-trip City network is a system. It has primary paths involving the paths both newly proposed and already planned, together forming the backbone of the network. Then it has the secondary paths connecting the less central areas and places to the main places and open spaces. Having created the network, what it is more importantly, it is crucial to redesign the spaces in and along the network, which means the sections of the network and different spatial patterns in the network will be re-organized according to the new system. To make the space more suitable for walking, different pattern of spaces, based on their features, are improved in generally three dimensions: safety, comfort and fun.

2.8 Main strategies in three levels

With the goal of a walk-trip city and main tasks, the process of establishing the network is divided into three levels.

Level 1: based on the current conditions and transformation undergoing, the primary and the secondary paths are proposed with one part already planned in the operation done by the government and the rest newly proposed.

Level 2: to deal well with the relationship between the Walk-trip network and the existing network, especially the relationship between walkers and cars. Then the accessibility of the network is considered.

Level 3: it is the most important and the central argument of the plan. The main task is to redesign and improve the micro space in and along the network. The network spaces in different spatial patterns.

3. The Walk-trip City of Wuchang historical area

3.1 The Walk-trip City network

The idea of choosing the paths of the Walk-trip network is to utilize the existing paths suitable for walking to connect the main places and green and open spaces. By using the undergoing project, the primary paths of the network consist a path done by the project and another proposed in the Walk-trip city network. The secondary paths are basically the main paths into blocks with good accessibility. **(Figure 11 and Figure 12)**

The structure of the network could be summarized as “One Axis, One Ring with Branches”. One Axis refers to the axis existing in the project undergoing, which aims at connecting the main natural elements in the south part of Wuchang historical area, Snake Mountain and the Ziyang Park. One Ring refers to the walking ring proposed in the north part which aims at connecting the south and the north part of Wuchang historical area as well the main places in the whole area. Together they build up the backbone of the network for people to walk to reach the main places, the main green and open spaces within few minutes with the presence of some other secondary paths from where people live.

In detail, the existing axis goes from Shouyi Square to Ziyang Park around Ziyang Lake and ends at renovated Revolution Gate. The proposed ring starts from Shouyi Square, turns along Simenkou Shopping Street till Tanhualin Historical Residential District, which should be further planned. Besides, there are secondary paths grow from the primary paths into districts with short distances.

Based on the road conditions at different positions, the sections of the primary paths and the secondary paths are redesigned, which will be illustrated later.

3.2 Walkers and cars

In order to guarantee the real use of the network, the benefits of walkers, it is then very important to consider the relationship between current traffic network which gives priority to car users and in particular, the relationship between walkers and cars. In the walk-trip network, on the contrary, the priority is given to walkers. Planning strategies are taken according to walkers needs in safety, comfort and fun. **(Figure 13)**

As shown in the figure, the main four conflicting points exist at where the primary axis and primary urban roads meet. They are the intersections at where Jiefang Road and Pengliuyang Road meet, where Shouyi Square and Pengliuyang Road meet, where the horizontal axis meet Ziyang Road and in front of Hubei Library. To make sure the completion of the walk-trip network for walking, two tunnels for cars with pedestrian squares above are planned at the main conflicting points along the primary horizontal axis. At the other two conflicting points two flyovers are proposed so that walkers can continue to walk safely and comfortably without hurry in the rushing car flows.

At the other less sharp conflicting points, again priority should be given to walkers. As presented in following “The Network in Urban Road” as example, walkers’ crosses and facilities must be

completed.

3.3 The distance

Giving a network perfectly connecting the resources, without accessibility it is still not possible comfortable for people to use to walk to reach. Therefore, to control the walking distance from where people live to the network is quite a practical issue. Due to the fact that most of the districts around the network paths are residential, so they can be considered as the starting point of walking. Within the comfortable distance of 500 meters, all the districts in Wuchang historical area can reach the paths of the network. Within 1000 meters' walk, people can reach the primary paths. On the paths, new facilities for rest and staying should be guaranteed. **(Figure 14 and Figure 15)**

3.4 The spaces of the Walk-trip network

3.4.1 Safety, comfort and fun of the spaces

With the Walk-trip network available for people to reach places in Wuchang historical area, it is then more important to make the network better for people to use as individuals. The space should be kind to people and interesting and comfortable to use. With this aim, three main dimensions of space are considered: safety, comfort and fun. Each of them represents both walkers' practical needs and a series of changes in space accordingly.

At present, the safety of walkers is totally neglected in Wuchang historical area. They are in a "dangerous" situation in the urban traffic. As a Walk-trip City, it is a must to give high attention to the safety of walkers, for babies, children, and old people as well as for ordinary walkers. The main approaches are "Traffic Separation", "Pedestrian Cross" and "Social Monitor".

A Walk-trip City often face a problem of shortage of necessary connections, convenient routes and buildings condition, which together decrease the distance people can walk. For this reason, walkers' priority must be guaranteed. The main approaches are "Direct Path", "Flyover and Tunnel" and "Weather Protection".

A Walk-trip City must be also interesting and funny to walk and to use. It should have diversified characteristics, kind, easy to understand with collective memories. The main approaches are "Buildings' Elevation Renovation" and "Identifying Places and Paths".

The spaces of new Walk-trip network differ in different spatial patterns. In different patterns, space should be considered specifically. The main tools are "Path Sections" and "Pattern Plan". **(Figure 16)**

3.4.2 The network in urban road

The urban road space makes up the main traffic space of the whole Wuchang historical area. In the walk-trip network, parts of it are utilized as the primary paths. As previously analyzed, the

main problem of urban road space is related to the relationship between walkers and cars. Therefore, in order to create a city for walking, the urban road should not be a place dominated by cars. The way of use of space must be redesigned.

The main interventions are concentrated on the road section which is a helpful tool to look at the use of space. As illustrated in the figures, the main actions will be “Re-division of Tracks”, “Pedestrian Cross System”, “Elevation Renovation”, “Weather Protection-Awnings” and “Activity Diversity”. **(Group Figure 11)**

Re-division of Tracks: the main urban road space is divided into two parts by a green belt with tall trees so that the roads don’t seem so wide without sense of space. What was previously totally occupied by parking cars now is partially parking space. Space is given to riders. A large part of urban road space is given to walkers. Close to buildings there is the passing space with sidewalk facilities alongside.

Elevation Renovation: to improve the mental quality of the urban road space for walking in the walk-trip network, the buildings’ elevations must be coordinated to create a sense of harmony instead of present mess and confusion. This provides walkers fun to walk.

Weather Protection-Awning: awnings should be added to where there are not so that people can walk comfortably even in the day of rainfall or snowfall. The existence of awnings is also useful to create the sense of safety with a stronger sense of space.

Activity Diversity: it is aimed at creating diversity along the urban road space so that there will more liveliness and more social interactions. “Social Monitor” will be the most useful invisible eye on the streets to help people with each other to be happy and safe to stay. Diversified functions should be introduced along the streets like groceries shop of 24h, restaurants, clubs, schools, etc.

As there are differences in the urban roads, however, generally in the walk-trip network, urban roads have three typical sections as illustrated in the figures.

3.4.3 The network in Urban Village Pattern

Urban Village pattern is characterized by scattered space with poor quality of space and life. It is also usually isolated by the neighborhood. Therefore, the planning strategy is to utilize the walk-trip network as a infrastructure and opportunity to organize urban villages and give them identities in city. The main actions are “Interior Primary Walk-trip Path”, “Clear Definition of Interior Paths”, “Identifying Open Space”, “Building Renovation and Partial Demolition” and “Improvement of Street Section”. **(Group Figure 12)**

Interior Primary Walk-trip Path: Utilizing the existing path in the urban village, the plan proposes to transform it into a path of greater meaning by section changes, spatial design and functional difference. It is the backbone of urban village and connects the most important places in the district.

Clear Definition of Interior Paths: Starting from the primary interior path, sub paths are to be clearly defined to organize the scattered space of urban village. Most of them are existing but with section changes.

Identifying Open Space: In urban villages, there is a serious shortage of public space and public facilities. The plan proposes open space in the urban village by, hopefully, utilizing existing space.

It also proposes to renovate buildings around the open space and turn them into public facilities like community center. Environmental design should be a specific task for each urban village.

Building Renovation: Besides the renovation of the buildings around open space, this action proposes also the renovation of some buildings, in particular the elevation renovation along the main interior paths.

Partial Demolition: At some places, some buildings have to be removed either because they are seriously in bad condition without value to renovate or because they occupy crucial position. But never mass demolition.

Improvement of Street Section: The sections in urban villages can be generally categorized into two types: one for the primary path and another for the secondary paths. The primary path will be used for few car flows and mainly for walking while the secondary paths will be only used for walking, peaceful and clean. Social relationship is encouraged to guarantee social monitor and increase the sense of safety and belonging.

3.4.4 The network in Mosaic Settlement Pattern

The pattern of Mosaic Settlement is characterized by a mixture of various types of buildings with very high density. Again, the use of space is quite unclear with difficulty in understanding. Hence, the planning strategy is to try to build up an interior network related to the walk-trip network. This interior network is used to redefine and organize the space. At somewhere, some buildings should be removed while some buildings should be renovated into buildings of landmark. Open space is more important to let the space breathe. The main actions are “Interior Network”, “Identifying Open Space”, “Building Renovation and Partial Demolition” and Improvement of Street Section”. **(Group Figure 13)**

Interior Network: It is an interior network largely based on existing paths. The aim is to form a structure and give an order to the pattern of space and for better use of space. This network has no clear classification with a center in the open space but it is oriented to the walk-trip network.

Identifying Open Space: Open space is not always available in this pattern. Where there is no open space, it is proposed to create one of the people to stay. It must be accessible and comfortable to use and stay.

Building Renovation: buildings in the open space should be renovated to give a sense of landmark and center. Functional adaption should also be considered according to specific case.

Partial Demolition: Due to the mosaic spatial pattern, in order to create the network, some buildings must be removed. However, it is based on the lowest costs of residents rather than the developers.

Improvement of Street Section: Though the sections of the paths are not always exactly the same, but it is proposed to have similar appearance so that the sense of network would stronger instead of current mess and loss. Compared to before, more rights are given to walkers and their uses.

3.4.5 The network in Neat Settlement Pattern

Neat Settlement is featured as planned district with rich spatial resources and open space but

without organic structure. The main planning strategy is to give a classified order to the district of neat settlement and relate it to the walk-trip network. The main actions are “Interior Primary Walk-trip Path”, “Identifying Open Space” and “Improvement of Street Section”. **(Group Figure 14)**

Interior Primary Walk-trip Path: To utilize the walk-trip network path as one primary interior path of the interior network. It also connects the main places and open spaces in the district. From the primary walk-trip path, the secondary paths reach out to give accessibility to the whole district.

Identifying Open Space: As there are plenty of green and open spaces in the pattern, the main task is to make them easier to reach, easier to use and more comfortable to stay.

Improvement of Street Section: There isn't too much necessary to do in the section of Neat Settlement because the space is generally properly used. The main problem is that the social relationship and interaction is not very frequent due to the inwards design of houses. In the new section, frontage space will be given more importance with more activities.

3.4.6 The network in Green and Open Space Pattern

In Wuchang historical area, there are four types of Green and Open Space as previously presented. However, three of them are already related to projects undergoing. So the only one, which is also the most relating one to people daily life is the green and open space in the neighborhood. It is often affiliated to a historical monument or landscape, too much symbolic and formalism without place for people to stay in the green. The main planning strategy is coordinate the historical places, the green and open space and the walk-trip network so as to make it used by more people but not just being left as a symbolic place. The main actions are “Interior Paths”, “Building Renovation” and “Identifying Meeting Place”. **(Group Figure 15)**

Interior Paths: the primary paths in the green connect the historical places to the walk-trip network.

Identifying Meeting Place: The green space should not be only as monument standing there for people to watch. Open space and meeting place should be built up to take in people to stay, to play, to establish relationship and to leave memories.

Building Renovation: The main buildings around the green space should be renovated with criterion of “renovating them as they were”.

3.4.7 The network in the Citadel Pattern

A heavy industry in downtown area of a city is quite unique. In Wuhan, this is the single case. The main planning strategy is to separate the residential district from the factory and relate it to the walk-trip network while, at the same time, creating places along the primary interior path. The main actions are “Protection Green Belt”, “Interior Primary Walk-trip Path”, “Identifying Interior Open Space” and “Partial Demolition”. **(Group Figure 16)**

Protection Green Belt: A green belt is to be built up between the industrial area and the residential district so as to keep away the pollution, noises and smoke from the living space. Tall trees and special plants should be chosen to build up a “wall”.

Interior Primary Walk-trip Path: Based on the existing path, demolishing some buildings of bad conditions, an interior primary walk-trip path is proposed to relate the district to the walk-trip network. It is the backbone of the district to make it in order and easier to use.

Identifying Interior Open Space: As residential districts beside industrial site, they are usually characterized by poor housing quality similar to urban villages. Therefore, public space is very important here. By using potential empty space or by exploring new space, a public place for people to meet is to be created along the primary path.

4. Conclusion and prospect: a Walk-trip City, co-existence of diversified patterns within the same network for better use of space

Based on comprehensive reinterpretation of the situations of Wuchang historical area, this paper first gives an overall description of the area in terms of urban space, and then analyzes its transformation and the current operations undergoing led by the government. However, these approaches are not working because they are too similar and rigid. Urban planning and design in China is now too rough and is influenced heavily by politics and profits. Historical context and values of space are not given enough attention. Therefore, this paper, with a view from the bottom, looks at the micro use of space and proposes some strategies to improve the quality of space from the point of view of walkers, the users, instead of the view of officials in the government based on different features of the spaces in Wuchang historical area.

Utilizing undergoing projects that aim at connecting the main resources of the area for the 100th anniversary of Xin Hai Revolution, a network is proposed mainly by utilizing existing paths. This network is a network of paths of primary paths which connect the main places and the secondary paths which connect the primary paths to where people live. The idea is to use this network of paths for walkers to be the place to improve the micro use of space and quality of life. So the main actions would be on the paths including path's routes and paths' sections. Besides, by establishing the network, it is also an opportunity to give new life to the spaces of different patterns along the path. Hence, another idea is to improve the space in different patterns by utilizing the paths of the walk-trip network as an opportunity. In the patterns, the spatial structures, main paths and spaces would be improved according the features of the pattern by working on patterns' plan and paths' sections.

Based on previous study and analysis, the main interventions on the spaces in different patterns can be summarized into four dimensions: "Restructure", "Security", "Comfort" and "Fun". "Restructure" refers to the new spatial structure relating to the walk-trip network. By introducing the paths, the spatial structure would be redefined to be better off. "Security" is an action on the paths' sections which involves road division, walkers' priority, adding pedestrian crosses. It also includes the functional diversities along the paths. Mixed-uses is proposed so as to create a sort of social monitor along the street to give walkers a sense of security. "Comfort" refers to the improvement of paths routes to make it shorter for walkers and to make the walking process protected by adding awnings, trees, resting facilities, etc. "Fun" refers to the creation of places in the spaces to let people stay and interact, and the renovation of some buildings and their elevations so as to give walkers more mental joy.

The main argument of the paper is just an attempt to raise the importance of "treating space with a view of Individuality" by working on the sample of Wuchang historical area. Current approaches of Chinese urban planning and design are too identical leading to the identity loss of Chinese cities and worsening of quality of space and life. By treating spaces of different patterns of different features and values individually, our cities will be of more diversity, kinder space and more common memories instead of a machine to realize politicians' goals of development.

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