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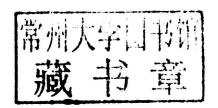




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# **Urban Planning and Development** in China and Other East Asian Countries

Edited by Guanzeng Zhang and Lan Wang





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# 中国及东亚国家的城市规划和发展

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Edited by Guanzeng Zhang and Lan Wang

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# **Forewords**

Today, a tremendous number of international students come to Tongji University and other Chinese cities for degrees and exchange programs in different disciplines in the context of globalization. Architecture, urban planning and landscape architecture are three important disciplines that attracted lots of international students under the circumstance of rapid and massive urbanization in China. These three disciplines have been the core programs of Tongji University and established their prestigious reputation in China and all around the world. As the basis for the three disciplines, the Gollege of Architecture and Urban Planning (CAUP) becomes the "Archi-port" of international exchange and collaboration.

With the effort since 2000s, CAUP have gradually developed 18 double-degree programs with European, American, Australian and Asian universities. About 170 students from 45 countries come to our college for study each year. And there are annually more than 150 lectures given by international scholars and about 300 academic visits. More than 70 English lecture courses have been offered for international students. Textbooks in English about urban planning and development in China are very necessary and valuable. This work of Prof. Guanzeng Zhang and Prof. Lan Wang provides an insight to understand the history, philosophy and intuitional arrangement of urban planning and development in China and other Asian cities. It illustrates the evolution of cities and the function of planning during the process. For international students who are interested in urban planning and development in Asian cities, reading this book is an important step for them to start their study.

I know Prof. Guanzeng Zhang for about 15 years. Prof. Zhang has devoted his efforts in studying urban development history and culture. He is one of the professors who opened the first group of lecture course in English at CAUP for international students. His cross-culture perspective, language capacity and rich humanistic knowledge provide this book a wide horizon and thorough analysis. This is an important piece of work before his retirement. I also know Prof. Lan Wang well. As a young scholar, she has already conducted solid researches and presented her academic capacity. Her portion brings unique features to this book with an elaboration of institutional design and legal system of planning.

With the globalization in the field of architecture design and urban planning, we need to embrace local culture and exchange experience with people from different cultures. To present our culture is an essential step for communication and teaching. The effort of Prof. Guanzang Zhang and Prof. Lan Wang is a milestone and would continue.

Jullen

Prof. Dr. Zhenyu Li Dean, College of Architecture and Urban Planning Tongji University

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The book is listed as a textbook for the Model Course in English for International Students by the Chinese Ministry of Education. We appreciate the efforts from the International School, Tongji University.

We are immensely grateful to Mr. Andrew Armbruster and Mr. James Stewart. As native speakers and international students majoring in urban planning, they commented on the manuscript. Dr. Liang He, Dr. Baoyu Wang, Dr. Ying Meng, Dr. Qing Fang, Dr. Lige Guo, Mr. Di Wang, Mr. Feng Qiu, Ms. Luyun Shao, Ms. Yahui Zhong, Ms. Su Li, and Mr. Hao Gu offered their assistance with figures and data to enrich the book. We would also like to thank the chief editor, Ms. Dai Jiang and the executive editor Ms. Jialin Yuan with Tongji University Press for their great work.

In the book, Sections 6.1.1 and 6.1.2 are selectively translated from two journal articles: Zilai Tang, Jingsheng Li, Urban Planning System in Japan, *City Planning Review*, 1999(10): 50-54; Anqing Ren, Law System in Urban Planning of Japan, *Peking University Law Journal*, 1988(2): 4-7. Section 6.3 is written by Dr. Jieun Kim, the Chief Research Fellow from Seoul Housing Corporation. Section 7.1 is mainly translated from certain chapters of *Urban Planning Administration and Regulation*, 2011, China Planning Press. Section 7.5 is partially selected from a journal article: Wang L., and Charles Hoch (2013). Pragmatic Rational Planning: Comparing Shanghai and Chicago, *Planning Theory*. 12(4) 369–390. We appreciate the works from other scholars.

# Contents

# **Forewords**

# Acknowledgement

| Chapter 1 East Asian Civilization and Ancient Chinese Philo |
|---|
|---|

| 1.1   | East A                           | sia   | 2                |
|-------|----------------------------------|---|------------------|
|       | 1.1.1<br>1.1.2<br>1.1.3<br>1.1.4 | Geographical Conditions and Early Civilizations<br>Formation and Growth of East Asian Cities<br>Common Features of East Asian Cities<br>Chronological Development of Urban Civilizations in China | 2<br>4<br>4<br>5 |
| 1.2   | Ancie                            | nt Chinese Philosophy   | 7                |
|       | 1.2.1<br>1.2.2                   | Basic Objects Studied in Ancient Chinese Philosophy<br>Early Practice of Chinese Philosophy in Urban Construction   | 7<br>10          |
| 1.3   | Early                            | City Forms and Planning   | 13               |
|       | 1.3.1<br>1.3.2<br>1.3.3          | Formation of Urban Order and Urban Systems<br>Principles for Early Urban Planning and Architecture<br>The Inner Structure of Early Chinese Cities   | 14<br>15<br>17   |
| 1.4   | Chine                            | se Ethical & Educational System   | 18               |
|       | 1.4.1<br>1.4.2<br>1.4.3          | Confucianism: Structure and Hierarchy in Urban Order<br>Confucian Influence over Urban Planning<br>Religion and Early City Life   | 18<br>19<br>20   |
| Chapt | er 2                             | Classic Chinese Cities  |                  |
| 2.1   | Cities                           | in Ancient Times  | 24               |
|       | 2.1.1<br>2.1.2                   | Distribution of Ancient Urban Relics<br>Yancheng City: A Capital in Spring and Autumn Period  | 24<br>24         |
| 2.2   | Urbai                            | nization in Imperial China  | 25               |
| •     | 2.2.1<br>2.2.2<br>2.2.3          | Imperial Cities in General<br>Urbanization Process in Chinese Empire<br>Cities in Early Empires   | 25<br>25<br>26   |

|       | 2.2.4                            | Cities in Heydays of Chinese Empires   | 30             |
|-------|----------------------------------|--|----------------|
| 2.3   | Cities                           | in Later Time Chinese Empire   | 34             |
|       | 2.3.1<br>2.3.2<br>2.3.3          | Yuan Dynasty and the Capital Dadu<br>Cities in Ming and Qing Dynasties<br>Beijing the Capital in Ancient Time  | 34<br>36<br>37 |
| 2.4   | Econo                            | omic Growth in Chinese Empires   | 38             |
|       | 2.4.1<br>2.4.2                   | Traditional Handicraft Production, Market and International Trade<br>Commercial Cities   | 38<br>42       |
| 2.5   | Posta                            | l System and Urban Construction  | 46             |
|       | 2.5.1<br>2.5.2<br>2.5.3          | Postal System in China<br>Jiming Yi: A Postal Station in the North<br>Yucheng Yi: A Postal Station in the South  | 46<br>47<br>48 |
| 2.6   | Well-                            | preserved Old City/Town  | 48             |
|       | 2.6.1<br>2.6.2<br>2.6.3          | Pingyao Old City<br>Zhujiajiao Old Town<br>Garrison System and City Construction   | 48<br>49<br>50 |
| 2.7   | Featu                            | res of Ancient Chinese Cities  | 53             |
| Chapt | er 3                             | Chinese Villages and Classic Gardens   |                |
| 3.1   | Tradi                            | tional Chinese Villages  | 56             |
|       | 3.1.1<br>3.1.2<br>3.1.3<br>3.1.4 | History of Chinese Villages and Construction Theory<br>Social Structure of Chinese Traditional Villages<br>Elements for Village Construction<br>Villages after 1949 Revolution | 56<br>57<br>59 |
| 3.2   | Well-                            | preserved Chinese Villages   | 60             |
|       | 3.2.1<br>3.2.2<br>3.2.3<br>3.2.4 | Traditional Villages in Modern China<br>Chang Family Compound in Shanxi Province<br>Dangjia Village in Shaanxi Province<br>Traditional Villages in Anhui Province              | 60<br>62<br>63 |
| 3.3   | Chine                            | ese Classic Gardens  | 65             |
|       | 3.3.1<br>3.3.2                   | History and Philosophy of Chinese Classic Gardens<br>Well-preserved Classic Gardens  | 65<br>69       |

# **Chapter 4** Urban Construction and Development in EA Countries

| 4.1       | Japan                                     | ese Cities  | .   76                     |
|-----------|---|---|----------------------------|
|           | 4.1.1<br>4.1.2<br>4.1.3<br>4.1.4<br>4.1.5 | The Early Japanese Civilization The Shogunate Regime Period and Urban Development Construction of Castle Town Economic Development of Japanese Cities Modernization of Japanese Cities    | 76<br>79<br>81<br>83<br>85 |
| 4.2       | Korea                                     | n Cities  | 87                         |
| Ch out to | 4.2.1<br>4.2.2<br>4.2.3<br>4.2.4          | Construction and Development of Korean Cities in Early Times Structures of Korean Cities Seoul: History and Modernization Pyongyang: The Capital of Democratic People's Republic of Korea | 87<br>89<br>92<br>96       |
| Chapt     | er 5                                      | The 20th Century Urbanization in China  |                            |
| 5.1       | Colon                                     | ization of East Asian Cities  | 100                        |
|           | 5.1.1<br>5.1.2<br>5.1.3<br>5.1.4          | Impact of Western Civilization Japanese Invasion and Construction of Colonies Modernization Movement in the 19th Century China Historic Role of Colonial Chinese Cities                   | 100<br>100<br>101<br>103   |
| 5.2       | Urbar                                     | nization since 1949 Revolution in China   | 104                        |
|           | 5.2.1<br>5.2.2<br>5.2.3                   | The Start-up Stage (1949—1957) The Fluctuation Stage (1958—1977) The Sustained and Steady Development Stage (1978—)   | 104<br>104<br>105          |
| 5.3       | Urbai                                     | nization since 1978 Reform  | 105                        |
|           | 5.3.1<br>5.3.2<br>5.3.3                   | The Coastal City Construction<br>City Groups in Yangtze River Delta<br>City Development against a Background of Yangtze River   | 105<br>107                 |
|           | 5.3.4<br>5.3.5                            | Delta Integration Shanghai Development since 1991 Main Features of the Comprehensive Plan of the Shanghai   | 108<br>110                 |
| Chapt     | er 6                                      | Metropolitan Region (1999—2020)  Urban Planning and Its Influence on Asian Cities   | 111                        |
| 6.1       | Urbai                                     | n Planning in Japan   | 116                        |

|       | 6.1.1<br>6.1.2                   | Urban Planning System in Japan<br>Plans for Tokyo   |   | 116<br>120               |
|-------|----------------------------------|---|---|--------------------------|
| 6.2   | Urbar                            | n Planning in Vietnam   | 1 | 126                      |
|       | 6.2.1<br>6.2.2<br>6.2.3          | Planning System Urban Planning Administration Cases in Vietnam  |   | 126<br>128<br>129        |
| 6.3   | Urbar                            | n Planning in South Korea   | 1 | 133                      |
|       | 6.3.1<br>6.3.2                   | Planning System<br>Economic and Spatial Development in Seoul  |   | 133<br>138               |
| Chapt | er 7                             | Urban Planning in China   |   |                          |
| 7.1   | Laws                             | and Standards for Urban and Rural Planning  | 1 | 150                      |
|       | 7.1.1<br>7.1.2                   | Laws and Regulations<br>Technical Standard System for Urban and Rural Planning                                      |   | 150<br>154               |
| 7.2   | Urbai                            | n and Rural Planning Law  | 1 | 157                      |
| 7.3   | Urbai                            | n and Rural Planning System   | Ī | 158                      |
|       | 7.3.1<br>7.3.2<br>7.3.3          | Structure of Planning System<br>Main Content of Urban and Rural Plans<br>Approval Procedure of Urban and Rural Plan |   | 158<br>159<br>160        |
| 7.4   | Admi                             | nistration and Revision of Urban and Rural Plan   | 1 | 161                      |
|       | 7.4.1<br>7.4.2                   | Urban and Rural Administrative System<br>Revision of Urban and Rural Plan   |   | 161<br>162               |
| 7.5   | Urbai                            | n Planning in Shanghai  | 1 | 163                      |
|       | 7.5.1<br>7.5.2<br>7.5.3<br>7.5.4 | Planning Institutions Plan System Plan Making Conclusion  |   | 163<br>167<br>171<br>176 |

# References

# Chapter 1

# East Asian Civilization and Ancient Chinese Philosophy

# 1.1 East Asia

East Asia is a sub-region of Asia that can be defined in both geographical and cultural terms. According to historical records, East Asian countries primarily include China, Korea (both Democratic People's Republic of Korea and Republic of Korea today), Japan and Vietnam (Socialist Republic of Vietnam today). They feature a centralized monarchy and similar cultural traditions, such as the writing system, with all of them having used one written language system in cultural communication and commercial exchanges, nearly 2,000 years, until the early 19th century.

Their historic records and social values are heavily based on ancient Chinese philosophy, with the state power of the East Asian countries reflected in highly centralized administrations. In this region, the classic cities were dominated by Confucian doctrine both in urban layout and embodied in social order; the urban life-style in these countries was directly influenced by ritual systems and the Buddhist religion.

Starting from the mid-nineteenth century, while encountering the intrusion of Western culture, all the East Asian countries took a consistent resistance at the beginning, but ended in different fates due to different orientations towards modernization. After the 2nd World War, and especially in the 1960s, 1970s and 1980s, because of the economic growth and commercial expansion, East Asia has been on the rise as a target of research interests for countries all over the world. This area seems to have the potential to generate alternatives to the Western-dominated civilization of the 20th century, and will play a more and more active role in the progress of the world civilization<sup>1</sup>.

# 1.1.1 Geographical Conditions and Early Civilizations

East Asia enclosed a relatively isolated but civilized land in history from a geographic standpoint as follows: to the east, there is the vast Pacific Ocean, an impassable barrier for ancient people to communicate with other parts of the world; to the west, there is the Pamir Plateau where all creatures have been facing the harshest living environments up to and including the present day; to the north lies the Mongolia Prairie, a place not suitable for urban development both in history and in the era of Globalization at present; and to the south, the Himalaya Mountains have blocked most communication between China and other south-east Asian countries. Only in ancient times, through very limited mountain paths the East and the South-east, Asian civilizations could collide with each other.

In this enclosed continent, two big rivers — the Yellow River and Yangtze River — provide fertile land and incomparable agricultural conditions, which nurtured one of the earliest civilizations in the world, together with those in Mesopotamia, Egypt and the Mediterranean Sea. The earliest urban form of East Asia was born in this area and rapidly grew into a leading force in world civilization. The administration system and urban form defined by this system were transmitted to the peninsulas and islands neighboring the continent, creating a large cultural circle featuring unity and closeness: unity in culture, such as the writing system, calendar, habits and customs, especially in the early city form; closeness in social and economic isolation, mainly confined to internal communication until the era of the Western powers expansion in the 19th century.

Today, the East Asia area covers approximately 12,000,000km<sup>2</sup>, something 28% of the

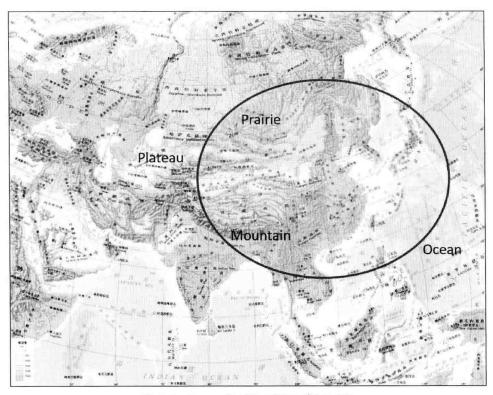


Fig 1-1 Geographical Condition of East Asia

Asian continent, and about 15% bigger than the area of Europe. More than 1.5 billion people now live in East Asian countries, about twice the population of Europe and a quarter of the total population of Asia. But what makes this region well-known is not only the population density (on average 133 residents per square kilometer), but also the strong urbanization.

Many cities have been built and developed here, and some are on the list of world or continental-class cities, including Tokyo, Hong Kong, Seoul, Shanghai, Beijing, Osaka and Ho Chi Minh, among others.

Historically, many societies in East Asia had been a part of the mutually recognized civilization. Today, the East Asian vocabulary and scripts are still widely acknowledged as derived from Classical Chinese and Chinese script, which are still alive in Japan and Korea (there seems to be a voice in favor of restoring the Chinese characters in international relations and business, especially in Republic of Korea). Though there are different religions in East Asia, such as Confucianism and Taoism in China; Shinto in Japan; Shamanism in Korea; and the wide dissemination of Christianity in early modern times, such as in Vietnam, in terms of the broad span of history. Buddhism was the first influencing religion flourishing in China, which then disseminated to other East Asian countries. Today Buddhism is still the most important religion featuring the cultural characters of this area.

The Buddhist temples in East Asian cities are as popular as the Christian and the Catholic churches seen in European cities. Besides, the Chinese calendar is the root from which many other East Asian calendars are formed, and it leads to many important national festivals in East Asian

countries, among them the Chinese New Year has become a cultural event worldwide.

### 1.1.2 Formation and Growth of East Asian Cities

In East Asia, urban development has not ceased for a rather long period despite wars, natural disasters and social turbulence. This is a sharp contrast to the so-called "Dark Ages" in the West Europe, marked by the collapse of the Roman Empire in 476 AD and the rise of the medieval cities. A clear trajectory of urban formation and development in East Asian countries is observed from both geographical and civil aspects: cities were born first in the core area (mainly the Yellow River and Yangtze River basins), and slowly extended to the borderlands (including the Korean Peninsula, a part of the Indo-China Peninsula and the Japanese archipelago); advanced technologies and philosophies of an agricultural society spread from the highly civilized areas (featuring large and well-planned political capitals) to the benighted (only the preliminary tribes) areas; cultural and economic exchanges were frequently carried out between China, Japan, Korean, Vietnam and other neighboring areas inside the traditional East Asian scope. After the invasion of Western cultures in the mid-19th century, all the East Asian countries promulgated a concerted anti-foreign policy, though they each ended in different fates.

In history, urban pattern changes worldwide are driven by many cultural and technical factors of which the most important are: values, philosophy, administration system, population size, design techniques, building methods, paving techniques, and transport technology, etc. City is a comprehensive expression of all the above-mentioned factors, the profound basis of East Asian cities originated from ancient China — her civilization of cities has influenced other East Asian countries for over 2,000 years. It has developed a unified urban theory, spatial form, artistic planning and aesthetics values, all of which are now the unique wealth inherited and developed by the East Asian countries.

### 1.1.3 Common Features of East Asian Cities

Since the East Asian area was comparatively isolated from other early civilizations in the world for nearly 2,000 years, China dominated this area with her strong cultural and economic power and mature centralization system. All of the neighboring countries in East Asia adopted the Chinese doctrine of urban development and administration, especially the model of capital construction, in the embryonic period of each respective civilization.

In the field of ancient philosophy, East Asian countries all paid reverence to astronomic phenomenon which would decide the sitting of city locations; all accepted Confucianism in mutual cultural dissemination and exchanges, the ceremonial orders embodied in the hierarchical structure of the urban spatial layout of each country were the same as observed in the Chinese empire. Even the discriminative Chinese-barbarian values were shared by the early East Asian countries, expressed in urban architecture, size, layout, building colors and urban policies.

As can be seen in many places in the world, straight streets and the grid form of a city often express the power of a ruler and his will to impose his chosen order. This is a common strategy in almost all East Asian cities, that adopted a square form with the North-South central axis and symmetrical buildings on both sides; the palaces of emperors/kings were built near the north end of the axis; all cities were protected by a city wall (though many were quite vulnerable and vanished quickly in countries besides China) and served as political

rather than economic centers; all built Confucian schools and other ceremonial buildings in fixed places inside the city walls, which followed hierarchal rules; all strictly controlled the market and commercial activities in spatio-temporal dimensions, et cetera<sup>2</sup>.

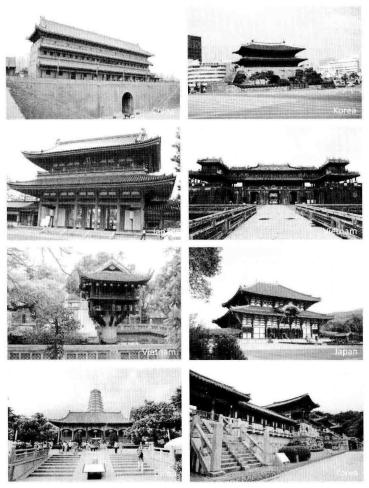


Fig 1-2 Common Features of East Asian Cities: city gate and temple

# 1.1.4 Chronological Development of Urban Civilizations in China

China is generally considered as the cradle for early urban civilization in East Asia, though for a thorough understanding it is necessary to first study the historic timeline of China. The urban formation and growth may be roughly divided into 3 categories: ancient times, the imperial period and the modern age, each covering several important dynasties with implicit cultural features, which directly influenced the urban form and spatial layout of Chinese and other East Asian cities within different time periods (see the table on the next page):

|                             | Ancient Times Capital Cities |                          |
|-----------------------------|------------------------------|--------------------------|
| Period Name                 | Time Period                  | Capital                  |
| Xia Dynasty                 | 2100BC—1600BC                |                          |
| Shang Dynasty               | 1600BC—1046BC                | _                        |
| Zhou Dynasty                | 1046BC-771BC                 | Gaojing (镐京)             |
| Warring States Period       | 771BC—221BC                  |                          |
|                             | Imperial Period              |                          |
| Period Name                 | Time Period                  | Capital                  |
| Qin Dynasty                 | 221BC—206BC                  | Xianyang (咸阳)            |
| Han Dynasty                 | 206BC—220AD                  | Chang'an (长安)            |
| Divided and Disorder Period | 220—589                      | -                        |
| Sui Dynasty                 | 581—618                      | Daxing (大兴)              |
| Tang Dynasty                | 618—907                      | Chang'an (长安)            |
| Song Dynasty                | 960—1279                     | Bianliang, Lin'an (汴梁、临安 |
| Yuan Dynasty                | 1271—1368                    | Dadu (大都)                |
| Ming Dynasty                | 1368—1644                    | Nanjing, Beijing         |
| Qing Dynasty                | 1644—1911                    | Beijing                  |
|                             | Modern Age                   |                          |
| Period Name                 | Time Period                  | Capital                  |
| Republic of China           | 1912—1949                    | Nanjing                  |
| P. R. China                 | 1949—                        | Beijing                  |

The history of China could also be classified as the Ancient period, Middle Ages and Premodern Times based on the time division method adopted in Europe, as follows:

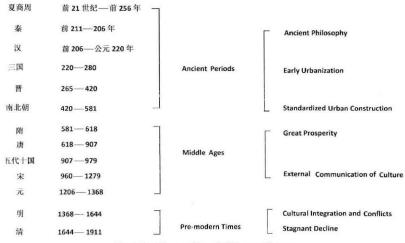


Fig 1-3 Time-table of Chinese History

# 1.2 Ancient Chinese Philosophy

# 1.2.1 Basic Objects Studied in Ancient Chinese Philosophy

Due to unique geographical conditions and prolonged isolation from other civilized areas in the world, East Asia gave birth to an ancient philosophy. Initially established on the continent (China), it was then consummated in the process of urban growth, through adding new elements, such as the Yin-Yang (阴阳) concept and Five-Element (五行) theory, until a complete and mature philosophical system was established. Ancient Chinese philosophy focuses on the laws of the universe and the highest values of human society, all of which are collectively reflected in the urban forms and constructed works. Therefore, this ancient philosophy has not only laid a solid foundation for the development of square-shaped cities (following the grid system layout) in ancient China, Korea, Japan and Vietnam (represented by the emphasis on forming a central axis in the basic layout and symmetry of cities), but also established a stable and long-standing social order, including a hierarchical society and a distribution system for social wealth, especially in spatial form as it relates to urban planning.

# · Yin-Yang and Wuxing (the Five-Element) theory

In ancient times, the Chinese believed that all things in the world and their interactions consisted of two opposite aspects — *Yin* and *Yang* (literally described as night and day, woman and man). According to the theory, the interaction between *Yin* and *Yang* gives birth to everything in the universe. Ancient Chinese believed that all the things in the world came from *Yin-Yang*, which was later added to with the content of the "five elements", thus the name "*Yin-Yang Wuxing*" (theory of *Yin-Yang* and the Five-Element). The five elements refer to the five forms of matter in nature, namely: water, fire, metal, wood and earth, but they may also be used to explain the causes of disease in the human body, the complicated spatial relations in city layout and building structure.

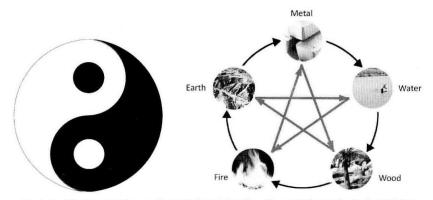


Fig 1-4 Yin-Yang (active and inactive) and the Five-Element Theory in Ancient China

It is believed by ancient Chinese that the five elements are originally intended to reflect the movement of *Yin-Yang* in the world, such as the changes of the seasons and other natural phenomena, like floods, earthquakes and storms. But in history, the concept of "Five elements" (Wuxing) had been attached with mysterious meanings by the school of Yin-Yang (appearing about 300BC-200BC). People believed that the five elements would give birth to and opposed one another in an endless circle, thus resulting in numerous changes in the boundless universe. In addition, the five elements have moral connotations: winter is represented by the north, connoting water morality; summer the south, fire morality; spring the east, wood morality; autumn the west, metal morality; the turn from spring to summer the center, earth morality. Ancient city planning and construction was greatly influenced by this theory and continued to develop a unique urban form that still survives in East Asian countries.

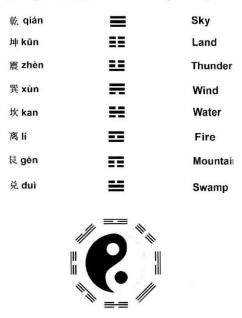


Fig 1-5 Fengshui Bagua (Eight Trigrams)

Though very similar to the Western system of Four Elements that represents the elemental substances, Wuxing in China has a far more extensive explanation about the society, the family and the cosmic order. For example, each phase has a complex series of associations with different aspects of nature. In the ancient Chinese form of geomancy known as Fengshui (风水, literally meaning wind and water), the earlier designers (they were likely the officials in charge of city construction or governmental buildings operations) always based their art and systems on the five phases, which are represented within a system known as Bagua (八卦, the Eight Trigrams, or eight symbols based on Taoist cosmology). Associated with these phases are colors, seasons and shapes; all of which are interacting with each other.

The ancient Chinese believed that based on a particular direction, the energy would flow from one phase to the next. This interaction could be expansive, destructive, or exhaustive. With proper knowledge of aspects such as energy flow,

the officials in charge of city construction or building operations would be able to apply certain cures or rearrangements of energy in a way they believed to bring beneficial ends for the project, whether it was a city or a building<sup>3</sup>.

Based on Yin-Yang Wuxing theory, Fengshui was adopted in house and city construction, which was known nearly 3,500 years ago, even before the invention of the magnetic compass. Traditional Fengshui instrumentation consists of the earlier form of the compass, which was in use since its invention, and a Fengshui ruler (a later invention). The goal of Fengshui both in ancient times and today is to situate the built environment on spots with good conditions qualified as "Qi" (\(\frac{1}{2}\), literally meaning the flow of energy), and the "perfect spot", which is a location and an axis for the spatial layout of a place or a house.

As weather changes in a given location over time, and the quality of "Qi" rises and falls over time, Fengshui might be considered a form of divination that assesses the quality of the local environment — including the effects of space weather. The ideal environment in accordance with Fengshui theory in ancient China consists of 2 elements: mountain and river, representing Yang and Yin respectively. According to this theory, a city should be located in