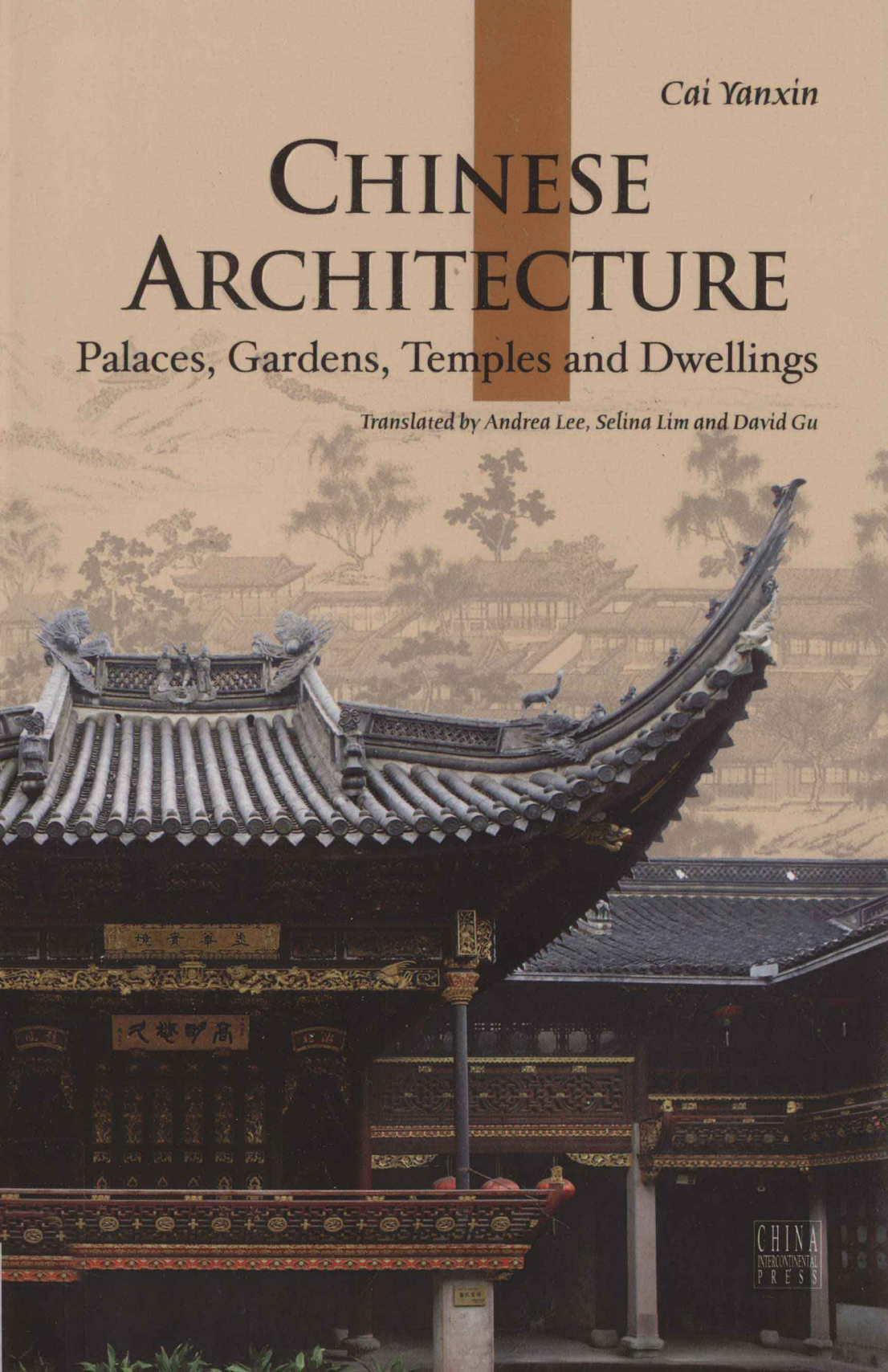
Cai Yanxin

CHINESE ARCHITECTURE

Palaces, Gardens, Temples and Dwellings

Translated by Andrea Lee, Selina Lim and David Gu



CHINA INTERCONTINENTAL PRESS

Cultural China Series

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图书在版编目（CIP）数据

中国建筑（英文）／蔡燕歆著；（新加坡）李（Lee，A.），（新加坡）林（Lim，S.），顾伟光译．—北京：五洲传播出版社，2010.1

ISBN 978-7-5085-1726-1

Ⅰ.中… Ⅱ.①蔡… ②李… ③林… ④顾… Ⅲ.建筑艺术－中国－英文 Ⅳ.①TU862

中国版本图书馆 CIP 数据核字（2009）第 201997 号

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Palaces, Gardens, Temples and Dwellings

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Publisher: China Intercontinental Press (6 Beixiaomachang, Lianhuachi Donglu, Haidian District, Beijing 100038, China)
Tel: 86-10-58891281
Website: www.cicc.org.cn
Printer: C&C Joint Printing Co., (Beijing) Ltd.
Format: 720 × 965mm 1/16
Edition: Jan. 2010, 1st edition, 1st print run
Price: RMB 98.00 (*yuan*)

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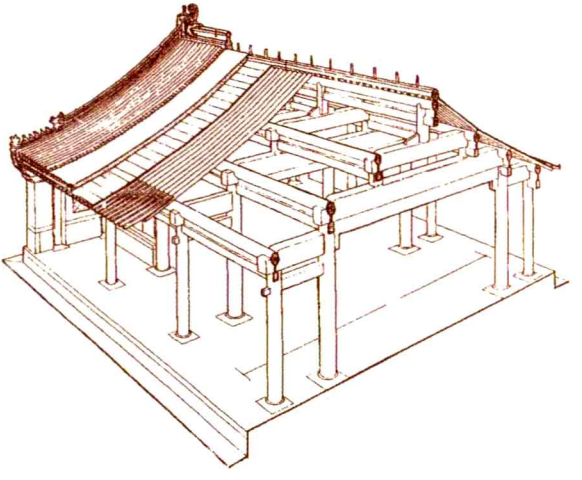
Preface

The history of China's architectural development can be traced back thousands of years to the start of the ancient era. At that time, ancient China's architectural structures were primarily composed of wood, with brick, tile and stone supplementing. Ancient Chinese architecture is not only a source of reference for modern Chinese design, but its cultural heritage has also had an international influence and attracted global attention. Appreciating ancient Chinese architecture can be likened to opening up an enormous history book. The legends of remote antiquity speak of the great military achievements of the Qin emperor, the noble spirit of the Tang Dynasty, the palace intrigues of the Ming Dynasty, not to mention the wisdom and intelligence of the millions of ordinary laborers that are neglected by the history books; all of their images are vividly recorded therein.

With regards to architectural categories, ancient Chinese architecture includes royal palaces, temples, residential dwellings, imperial burial grounds, landscape architecture, and so on. Palaces, temples, burial grounds etc., all tend to adopt similar architectural forms and overall patterns of layout, namely uniform symmetry, clearly demarcated primary and secondary lines and a central axis line enclosed within a quadrangle, thus expressing the the typical Confucian style and characteristic rigorousness of the peoples' character. Landscape architecture was completely different, with free and flexible arrangements, endless fluctuations and an all out

effort to pursue a natural tone, with far more vestiges of Daoist concepts.

From the point of view of architectural design, each building was divided into upper, middle and lower components. The roof composed the top, the foundation the bottom, and the pillars, door, windows and walls as the middle. The roof can be considered the most important part of ancient Chinese architecture; all roofs had a graceful and gradual curved shape, and could be classified into veranda roofs, gable and hip roofs, overhanging gable roofs, flush gable roofs, pavilion roofs etc., with each category representing a different degree of curve.

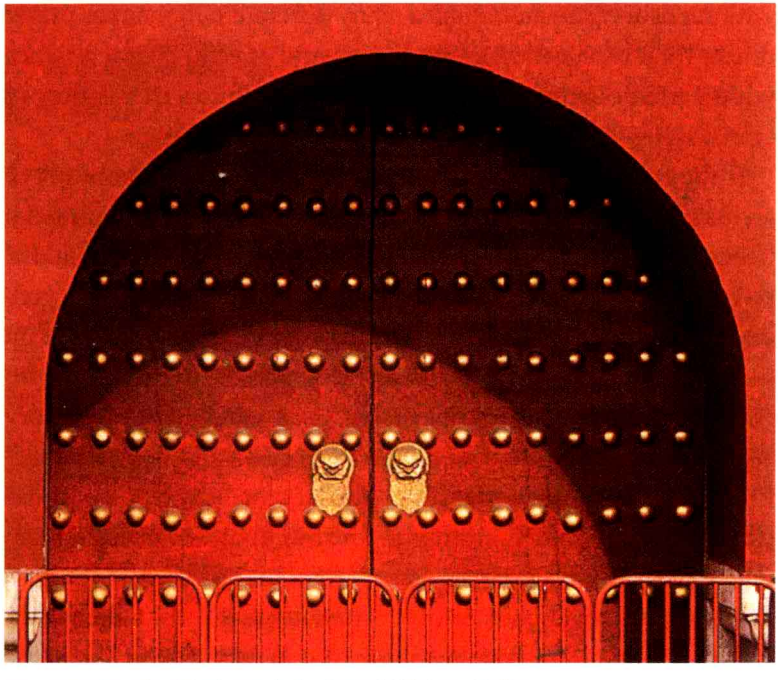


Sketched map of wooden structure of ancient Chinese architecture.

The framework of ancient Chinese buildings was composed of wood, from the columns, beams, purlins and other important parts, with every component's point of connection using a tenon and mortise joint, therefore forming a flexible and elastic framework. This kind of tenon and mortise joint was discovered among architectural ruins in the city of Yuyao in Zhejiang province, indicating that it was used in antiquity as far back as 7,000 years ago. Above the columns and below the roof there is a structural element built from alternating horizontal and vertical pieces of wood; these repeating layered components are called "dougong", or bracket sets. This represents a characteristic Chinese element within Eastern architecture, and serves not only as a roof truss and fillet, but also has powerful aesthetic effects.

Decoration was an important means of expression in ancient Chinese architecture. When building frames, ancient Chinese crafts-

men took full advantage of the malleable characteristics of wood, employing knives, hammers, chisels, drills, pens and other tools throughout the composition and artistic process. Therefore, most decorative Chinese traditional architectural had a practical value; it was closely integrated with the structure and often served not only as an artistic element but also as a structural one, and was most certainly never an unnecessary accessory. While they definitely possessed aesthetic beauty, more importantly they gave expression to the materials' natural qualities and the mechanical and logical beauty of the structure. Traditional Chinese painting, sculpture, calligraphy, colors, designs, patterns and other artistic methods all had practical applications within decorative architecture, while at the same time they provided the architecture with an ample artistic power of expression.

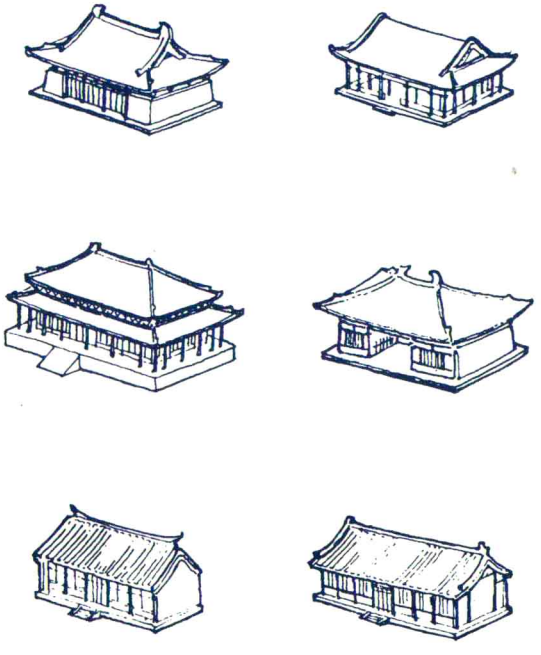


The red golden-knobbed gate in the Imperial Palace, Beijing.

The dominant Confucian concept of etiquette served as the fundamental framework of ancient Chinese society, even as an institutional norm with many different hierarchies, thus naturally permeating the creation process of decorative art. Architecture's purpose was certainly not just to "seek appearance", but rather to "show status"; architectural form, scope, decorative style, colors, texture, themes, etc. were all subordinated to their social function; they demonstrated the importance of architecture's social value.

Artistic architecture comes about under certain social conditions; it develops, forms and becomes familiar under these conditions, and therefore naturally reflects the place and time of its origin. The progression of time is reflected in the continuous reform and innovation of architectural styles, thematic content and methods of craftsmanship; the large degree of variation between the standards of different regions comes from their respective differences in environment and climate. China's many different nationalities prefer to use their own aesthetic traditions and special characteristics within artistic architectural styles, giving birth to a rich variety of ethnic styles.

Throughout the history of ancient Chinese culture, the study of architecture never acquired the importance it deserved. Traditional Chinese artistic architecture was arduously created and maintained by countless craftsmen who passed their knowledge from one generation to the next; in most dynasties architecture was never an independent field of study, and a formal process of preserving architectural history never took shape. Fortunately, within literary works many references can be found to cities and their architectural themes. These works at once reflect the watershed of those cities social life and architectural construction, while also depicting the features of contemporary urban architecture. Although rather sparse, several historical documents such as old blueprints, diaries of foremen or craftsmen involved in the construction of the imperial palace or other large architectural projects, several autho-



Different forms of roof in ancient China represent different classes of building.

rized histories and classical books, as well as treatises disseminated by architects themselves, all allow us a brief glimpse into the ancient architectural creation process.

The design work of ancient Chinese architecture is very similar to today's designs; architects and designers all attach great importance to the investigation and research of contemporary and former buildings, and usually synthesize and utilize previous models in the production of their designs. For a long time Chinese craftsmen have used a three-dimensional method—similar to modern isometric methods —in the creation of their designs. In the later stages of the Han Dynasty (206 BC–220 AD), formal architectural design patterns and explanatory documents were indispensable for large-scale architectural plans. By the middle of the 10th Century, architectural designs had reached a level of maturity that they hadn't achieved in the past.

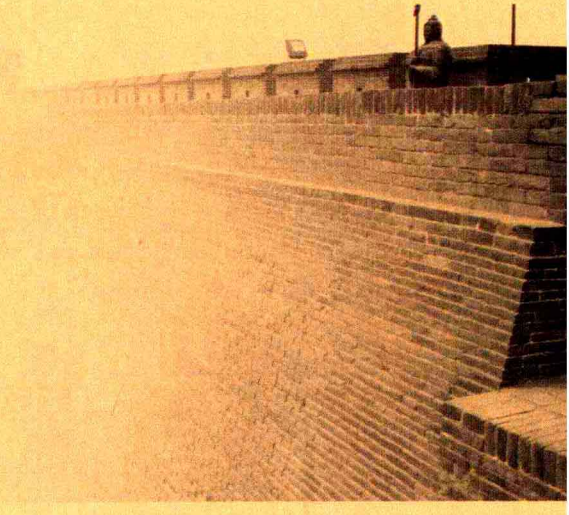
From the "Dongguan (imperial ministry of works) in Zhou Dynasty (1046 BC–256 BC) to the "imperial budgeteers and designers" of the Qing Dynasty (1616—1911) throughout two to three thousand years, China never had a specialized architectural bureau or official responsible for planning, construction, allocation of building materials, etc. It was the work of these very government institutions to bring about a high level of efficiency regarding the utilization of labor and the transportation of production

materials. Making standardization and modulation the central focuses of classical Chinese architecture enabled its wider implementation and popularization.

From the 19th Century onward the world experienced the gradual disintegration of feudalism, the eastward spread of western culture, the scientific and technological development of modern society, changes in cultural psychology and a growing interest in aesthetics among modern people. Chinese architecture of the 20th Century produced significant variations, and many public architectural projects appeared that successfully combined elements from China and the West. Especially after China's reform and opening up in the 1980s, cities' appearances transformed at an ever quicker pace and reflected a wealth of architectural styles. At present, finding a style that combines modern, organic and ethnic styles is the most important task facing contemporary Chinese architecture.

The book begins by introducing and distinguishing between the characteristics and development processes of several main types of ancient Chinese traditional architecture, then provides a brief description of the numerous and complex developments in contemporary Chinese architecture. Hopefully, it will provide interested readers with an overall description and contextual placement of Chinese architecture.

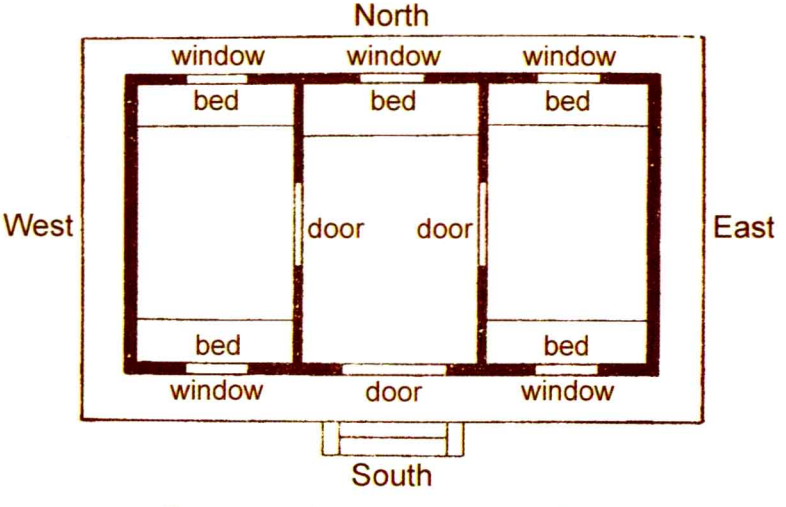
Ancient Cities



According to existing historical records and archeological evidence, the emergence of China's earliest cities generally occurred during the same period as the rise of the earliest ancient cities in the other parts of the world—at the end of primitive society (3000 BC–2000 BC).

These ancient cities were built on a very small scale, with inadequate internal infrastructure, and therefore, strictly speaking, should be defined as "castles", rather than cities, and in no way, could be compared to today's cities. It was not until during the Zhou Dynasty that Chinese cities developed at a faster pace, whereby urban city developments were governed by a specific set of rules and regulations shaped by the feudal system's class ranking classifications. An example of such a set of rules and regulations would be the ancient urban development code, *Zhou Li Kao Gong Ji (Rites of Zhou Dynasty,* Chapter of "Artificers' Record"), which contained detailed stipulations for areas ranging from the layout of the cities, to the width of roads for the various levels.

The space layout of the ancient Chinese cities, in the form of the grid system, had its origins in the country's early agricultural



The north-south layout of houses in ancient China.

The Well-field System

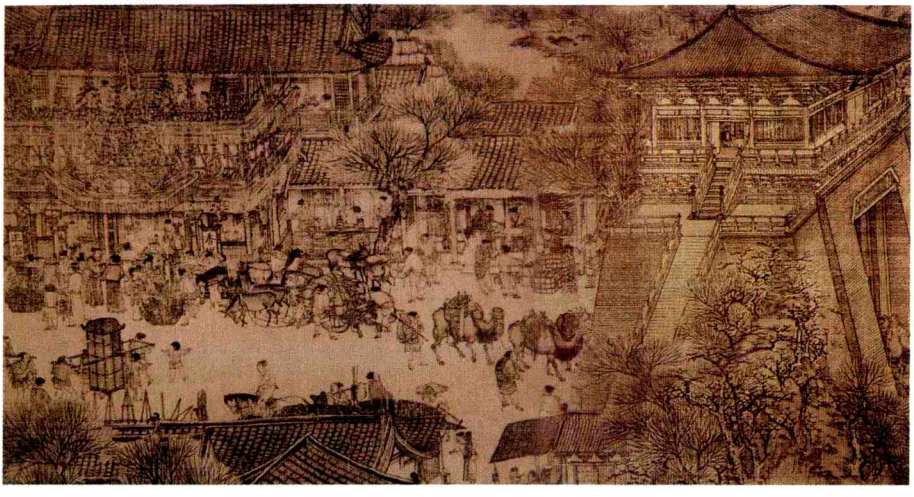
The well-field system, prevalent during the Western Zhou Dynasty, refers to the system of state land ownership that existed when China's society still practiced slavery. At that time, roads and channels that crisscrossed the land divided it into squares that were shaped like the Chinese character for "well" (井), giving rise to the name "well-field".

society, which was in turn characterized by the "well-field" system. On the other hand, the cool northern and warm southern climates of China, led specifically to an emphasis on a building being erected in a position with the front facing south, towards the sun and the back facing north, avoiding the chilly winds. The practice of constructing buildings on a north-south axis, has in turn given rise to the establishment of the north-south direction as the basis of the network of roads.

The philosophic foundation behind the concept of "square-shaped cities" in ancient China was determined by ancient philosophies such as the concept of "round heaven and square earth", as well as the philosophy of *yin-yang*, along with the principle of the five elements of water, fire, earth, wood and metal. The theme of duality featured in the above philosophies led to an emphasis on locating the central axis and thus symmetry, in the basic layout of the cities. As such, many cities and the buildings within also bore names and had locations which strongly reflected their symbolic meaning.

Geomancy (*feng shui*) is philosophy with origins in the traditions of ancient Chinese culture, which held great respect for man's natural environment. Hence, these philosophies had a significant impact on the choice of locations for the ancient cities as well as their layout.

The changes in the economic structure of the ancient Chinese society brought forward developments in urban city planning. During the Tang Dynasty (618–907 AD), for the convenience of administration as well as to ensure public security, *li-fang*, an "enclosed-structure" system was adopted for overseeing the cities, whereby residential streets and market areas were clearly segregated by the square-grid network of roads. Furthermore,



Part of the *Riverside Scene at Qingming Festival*, drawn by Song Dynasty artist, Zhang Zeduan.

every single street and market area had its own wall and gate, along with a gatekeeper, with the gates opening at dawn and shutting at night. This approach greatly inconvenienced people's lives and also limited the society's economic progress. It was not until the era of the Song Dynasty (960–1279 AD) that the "enclosed-structure" approach to city planning was abolished, due to extensive developments in agriculture, the handicraft industry, commerce, external trade and even scientific and technological advancements. Replacing the clearly defined areas for distinctive purposes, were many commercial streets, marking a shift from the allocation of space within cities from an "enclosed-structure" to an "open-structure". Indeed, one could witness the prosperous and bustling scenes of commercial streets in the capital city of Kaifeng during the Song Dynasty, from the scroll painting, *Qing Ming Shang He Tu* (*Riverside Scene at Qingming Festival*)—classified as one of China's national treasures today.

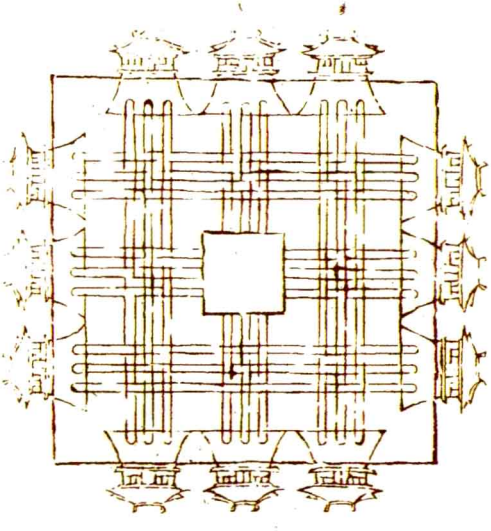
The Riverside Scene at Qingming Festival

The Riverside Scene at Qingming Festival is one of the rare masterpieces still in existence by the Northern Song Dynasty (960-1127) artist Zhang Zeduan. It shows the Northern Song capital of Bianjing (present day Kaifeng, Henan Province) in springtime, depicting the everyday social norms and customs of the capital and portraying a microcosm of the city's economic life. The work is on a scroll and uses the pointillism method of composition, rendering the scene's complexity into a unified and rich whole.

Capital Cities

Throughout the various dynasties in ancient Chinese history, the rulers of newly established dynasties had always emphasized the importance of choice locations for their capital cities, often sending their most trusted officials to conduct detailed topographical and hydrological surveys, and supervise the actual construction of selected sites. The main criteria for the choice of location for any capital city would be the strategic political and military needs of the ruler. Another critical factor would be the availability of water sources for drinking, farming and gardening, as well as waterways, which were the "lifelines" of every dynasty as they enabled the transportation of grain and other goods to the capital cities.

During the 11th Century BC, the fall of Shang Dynasty (1600 BC–1046 BC) followed by the rise of Zhou Dynasty saw the establishment of Haojing as the capital city (Xi'an City of Shaanxi Province today). The Zhou ruler conferred titles and land upon his royal clansmen, enabling them to build dukedoms in various areas throughout the kingdom. In accordance with this strategy of fiefdom allocation, the Zhou Dynasty began to construct cities which were centers of defense and political control on an unprecedented, large scale. To facilitate the building of these cities, a strict code of regulations for city planning and construction was devised by the Zhou ruler which



The layout of the Imperial City of Zhou Dynasty, recorded in the Chapter of "Artificers' Record" in *Rites of Zhou Dynasty*.

led to the surge in city-building activities. This also laid the foundation for ancient Chinese cities to be created according to a basic format—the front half of the city was designated as work and business areas while the latter half was reserved for housing and leisure activities.

The practice of "taking the middle or central path" had always been advocated in ancient China. Hence, likewise in the matters of building cities and capitals, symmetry is emphasized as the Chinese character "zhong (中)" (which means central). Laid out in a quadrangle shape, the Zhou capital city had three sets of city gates on each side while the imperial palace was located right in the centre. It became the model for the planning and construction of ancient Chinese capital cities.

To safeguard their rulers' lives, the capital cities of kingdoms stretching from the Warring States Period (770 BC–476 BC) right up to the Ming and Qing dynasties, had always been fortified with both inner-city and outer-city walls. As the ancient Chinese saying suggests, imperial cities or palaces within inner city walls were built to protect the rulers, while outer city walls and areas were for protecting the civilians. Most ancient capital cities comprised three sets of walls, with the imperial capitals or palaces in the centre, followed by the inner-city or imperial city walls and outer city walls respectively. The ancient Chinese rulers thus depended on this multi-layered city layout to protect themselves.

Chang'an City of Sui and Tang Dynasties—The Most Magnificent Capital City in Ancient China

The ancient capital city of Chang'an (present day Xi'an in Shaanxi Province) was the capital city of choice for the greatest number of dynasties in Chinese history. As many as 13 dynasties built their capital cities here and it was also reputed to be the world's longest-serving capital city with 1,100 years' history. Built on a large scale in a strictly symmetrical format, with streets laid out like a chess-