

INTRODUCTION

Beyond the Forbidden City

Chinese architecture rises across more than 4,000 kilometers, on a landmass of 9.707 million square kilometers (3.748 million square miles) on the eastern side of continental Asia. Yet when the two words, Chinese and architecture, are joined, almost anyone on any continent, usually without hesitation, visualizes a building from the Forbidden City (figure i.1). Most often it is the Hall of Supreme Harmony where the emperor of China held court from 1420 to 1912. With the possible exception of the Great Wall, the Hall of Supreme Harmony is the most recognized structure in China; it is the cover image of countless books and the single illustration for every variety of media. The hall is the identifier of China worldwide, not only because it presents such a clear image—high marble platform, vermilion wooden columns, complicated bracket sets, and a golden ceramic tile roof—but also because innumerable other buildings in China have so much in common with it. One can begin with other imperial structures such as the Hall of Spiritual Favors (*Ling'endian*) where sacrifices to the Yongle emperor, the man who ordered construction of the Forbidden City, were performed after his death in 1424 (figure i.2). One finds the same multitiered, stone elevation platform, approach from the front by stairs, vermilion pillars, bracket sets above them that support roof eaves made of ceramic tile and punctuated by parallel rafters in a 67-meter-tall, multistory pagoda, an example of religious architecture (figure i.3). Wood, brick, stone, and tile, the four materials used in all three buildings and the predominant materials in Chinese construction through the five millennia covered in this book, are put together in this way for most of that time.

These four materials are the province of craftsmen—carpenters, masons, and tilers—and unlike other Chinese arts such as painting or architecture in parts of the world such as Europe, Chinese construction has been considered a craft and its builders craftsmen for most of its history. Only a few names of men involved in the building industry in China before the twentieth century survive. Most of them were officials whose service at court included directing imperial-sponsored projects, perhaps occasionally even designing, and writing about construction. The classical Chinese language has no word for “architect,” only one for a person who engages in the craft of building. Instead, from as early as written records can confirm, the final millennium BCE, in every branch of Chinese construction—public or

private, imperial or vernacular, religious or secular—principles and standards established centuries earlier dictated building practices. The standards were sanctioned and guarded by the Chinese court, and the government was the sponsor of all major manuals that dealt with official architecture. Craftsmen were not required to be literate, only to follow prescribed modules and methods so as to ensure that court dictums were followed.

The treatises expound a standardized system of construction that is maintained not just in imperial buildings of life and death and a towering religious monument (see figures i.1–i.3) but in temples hidden in the mountains, houses, and shrines, and in paintings and relief sculpture of architecture through the ages (figures i.4, i.5). The treatises do not categorize Chinese buildings according to their functions but rather by importance. They also distinguish buildings by material. Wood, the most widely used material for the support system of architecture in China, receives the most attention. It is differentiated by grade through which techniques for large-scale, important buildings are distinguished from smaller, less important ones.

Wood joinery and the manipulation of timber more generally are unique aspects of Chinese architecture. The Chinese system goes far beyond the frame, referred to by Chinese builders as the wooden skeleton. The interlocking network of vertical, horizontal, and sometimes diagonal or curved wooden members through which a structure is supported is the result of a modular system whereby the measurement of almost any piece can be calculated from the dimensions of another piece. Modular construction on a larger scale means that from individual components such as pillars to entire planar sections of a building, all can be replicated, increased, decreased, repositioned, or eliminated to change a temple into a palace, a shrine into a house, or a humble dwelling into a lavish family compound, and vice versa (figure i.6). The proportional relationships throughout a Chinese structure have accounted for stability in severe earthquakes and have made it possible for any builder to repair or replace damaged parts, including those assembled in the distant past. The use of a modular system based on a building's rank and the ease with which wooden parts can be remade, replaced, or moved are perhaps the main reasons the perishable timber frame persisted for so long as the primary structural type in China.

In any configuration, the wooden pieces of a standard Chinese building divide themselves into three layers. Closest

i.1. Forbidden City, Beijing, Ming-Qing, and today



i.2. Hall of Spiritual Favors, Changling, tomb of the Yongle emperor, Changping, Beijing suburbs, ca. 1424

to the ground is the column network. The pillars that support a Chinese structure form a perimeter around the building. Sometimes there are interior columns, sometimes forming a grid, sometimes a concentric, interior rectangular set, and other times only a few pillars. Sometimes pillars define a front porch. The second wooden layer, joined to the upper portions of columns or to beams that cross the columns, is the bracket set layer. Last is the roof frame, the part of the building that supports rafters and roof tiles (figure i.7).

Below and above these three networks of wooden pieces, building components are made of other materials. The base of a Chinese building, the part that interfaces wood above it and earth below, ideally is made of nonrotting material, expensive stone such as marble for an eminent structure and brick or occasionally ceramic tile for a more humble one, and rammed earth when funds are limited. Only rarely are columns implanted directly into the ground. In more expensive buildings, columns are placed into pilasters rather than directly into a podium. A multilayer building foundation can be a sign of a structure's eminence.

The roof also defines a Chinese building. The roof, of course, is the protective cover for the interior. It is equally a decorative feature that displays a building's rank but not its function. Most

often the Chinese roof is covered with ceramic tiles, glazed for more important buildings. Golden roof tiles and ornaments along the roof ridges are reserved for the most important buildings, both imperial and religious. Usually roofs of China's most important buildings are hipped, sometimes with a second or even third set of eaves below the main roof. More than twenty styles of roof were used in pre-twentieth-century China.

A comparison between the stick-figure frames in figure i.6 and the Hall of Supreme Harmony or Hall of Spiritual Favors (see figures i.1, i.2) is a dramatic indication of how straightforward it is to erect a Chinese building, even a highly elaborated one. It is an equally emphatic presentation of the fact that the most significant differences between figures i.1 and i.4 are the number of repeated building units, courtyards around them, and decoration. How is it possible that emperors who could afford anything and had a limitless labor force continued to live in timber-frame buildings that differed from humble temples or dwellings of their most lowly subjects only in the amount of wood used and expense of materials that adorned them? This is a field-defining question of Chinese architecture.

i.3. Timber Pagoda, Ying county, Shanxi, 1056

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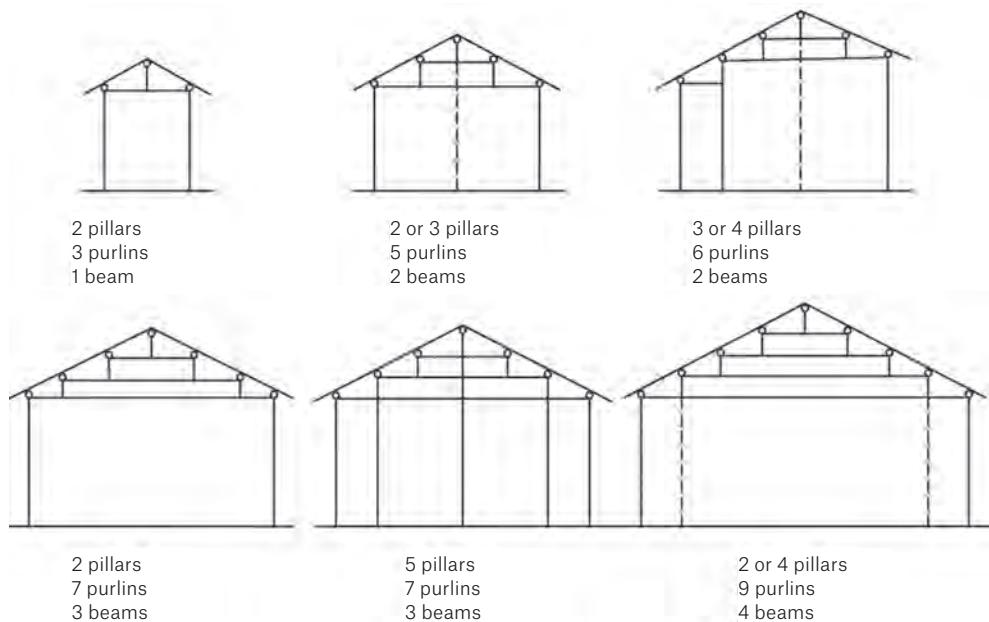


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i.6. Six combinations of pillars, beams, struts, purlins, and rafters, the modular components of a timber frame



Some might say that a profound reverence for the past, for the building system of the ancestors, drove decisions to preserve patterns of antiquity in much later buildings. Continuing along this line of thinking, one should be reminded that Chinese painting, too, has a long history of imitation, in part because old masters were revered and in part because painters learned by copying their predecessors. Painters, however, were not anonymous, and some were recognized as masters. The names of thousands of Chinese painters and their works are recorded from the fourth century onward. Moreover, it is easy to demonstrate that pre-twentieth-century Chinese painting broke from its past much more dramatically, much earlier, and intentionally, compared to architecture, and the cleavages occurred long before the contacts with the world outside that were to ignite changes in Chinese buildings. The major difference between painting and architecture is that a painting on silk or paper can be made in private, rolled up, put aside, or hidden. A building requires large sums of money and land, whether a family house, an emperor's palace, or an imperial or village monastery; bringing any of these to completion required an organized labor force. When a Chinese emperor built a palace or a villager contributed to a temple, history confirmed that those structures would outlive the patrons. The decision to build as China had in the past, in any century as recently as the twenty-first, was conscious and, in the case of the imperial monuments of Beijing, also political.

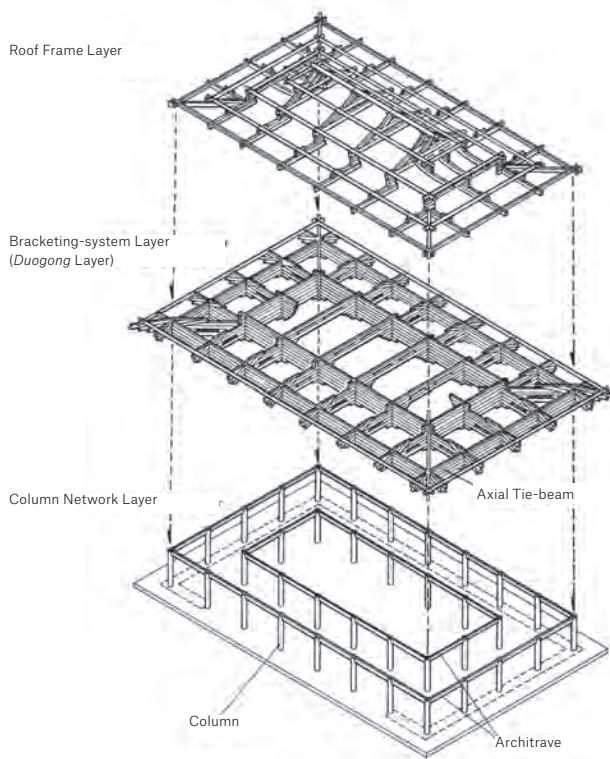
An aspect of the political impact of China's clearly recognizable architecture is that it is always recognizable out of

i.4. Qingliang Monastery, Yuncheng county, Shanxi, Main Hall repaired in second decade of fourteenth century

i.5. Buddhist paradise, Mogao cave 217, Dunhuang, Tang period

context, and the portable wooden pieces make it readily exportable. Anyone aspiring to make reference to China, from an admiring emperor of Japan in the eighth century who sought to model his nation after East Asia's most powerful example of statehood (Tang China), to William Chambers, who designed the China pavilion in Kew Gardens in the eighteenth century as a reference to exotic places of the Orient eyed as potential colonies by the British empire, could accomplish that symbol through wooden posts and ceramic tile roofs, or clear imitations of them in other materials. The simplicity and clarity of the model have meant that China has been able to maintain this profound emblem of its civilization across far more than the 4,000 kilometers of the Asian continent that have constituted its empire through history. Part of the success of the Chinese architectural system is that its modular components render archetypes such as the bracket set and the ceramic tile roof, or the one tall building, the pagoda, that readily lend themselves to imitation. "China" and "architecture" are the dominant messages of countless buildings for a multiplicity of purposes in China and in locations far beyond.

Reliance on past models and modularity are as important on a larger scale as well. Just as the Hall of Supreme Harmony is the archetypical individual structure, the Forbidden City in which it is central is the archetypical building complex. The eight fundamental features of Chinese spatial arrangement are present there. First is the horizontal axis. The primary axis is usually north-south, and the most important buildings are positioned on it. In figure i.1 we see north-south axial lines of buildings parallel to the axis of the Hall of Supreme Harmony, and we also observe buildings on perpendicular east-west axes. Spatial magnitude is expressed by longer and longer lines along horizontal planes, not vertically, for space requires ownership of land, so that someone with wealth can exhibit that wealth



i.7 Three timber layers of a Chinese structure: pillars, bracket sets, and roof frame

by more and more one-story buildings. Tall buildings, even with ceramic tile roofs, often look unnatural in a Chinese courtyard setting (figure i.8), for the second feature is that Chinese architecture, with the exception of the pagoda, which came to China as a foreign import from India, not only is one-story, it is human-sized. The height of columns across the front facade of the Hall of Supreme Harmony is about 8.43 meters, a mere five times the height of a man who would stand alongside them in an arcade.

The courtyard is the third fundamental feature of Chinese space. In this spatial world dominated by four-sided enclosure, south, the orientation of the Forbidden City, is the cardinal direction. Sometimes buildings stand on four sides of a courtyard, other times three; but the fourth face is always implied. In these courtyards enclosed by walls or covered corridors, the most important buildings are often arranged in a capital-I-shaped formation, known as the *gong* plan, named after the Chinese character *gong* 工. It has been reserved for the most eminent architecture in China since the second millennium BCE.

Fourth, every Chinese building complex has one focal structure, but no building stands in isolation. Implicit in the name of a building type, such as palace (*gong*), is that it is part of an architectural complex of interrelated buildings, courtyards, and enclosing arcades. *Gugong*, literally “former palace,” is the Chinese name of the entire Forbidden City. Individual Chinese

temples, Buddhist or Daoist, are part of a group of buildings that in this book are referred to as monasteries when monks were resident or as temple complexes.

Gates are the fifth feature. They are fundamental structures of any Chinese building complex—palatial, religious, funerary, or vernacular. Gates may be freestanding or attached to walls. They are psychological as much as physical structures. Like the enclosing spaces to which they may join, gates mark the boundary between more sanctified or imperial space behind them and the profane world in front or outside.

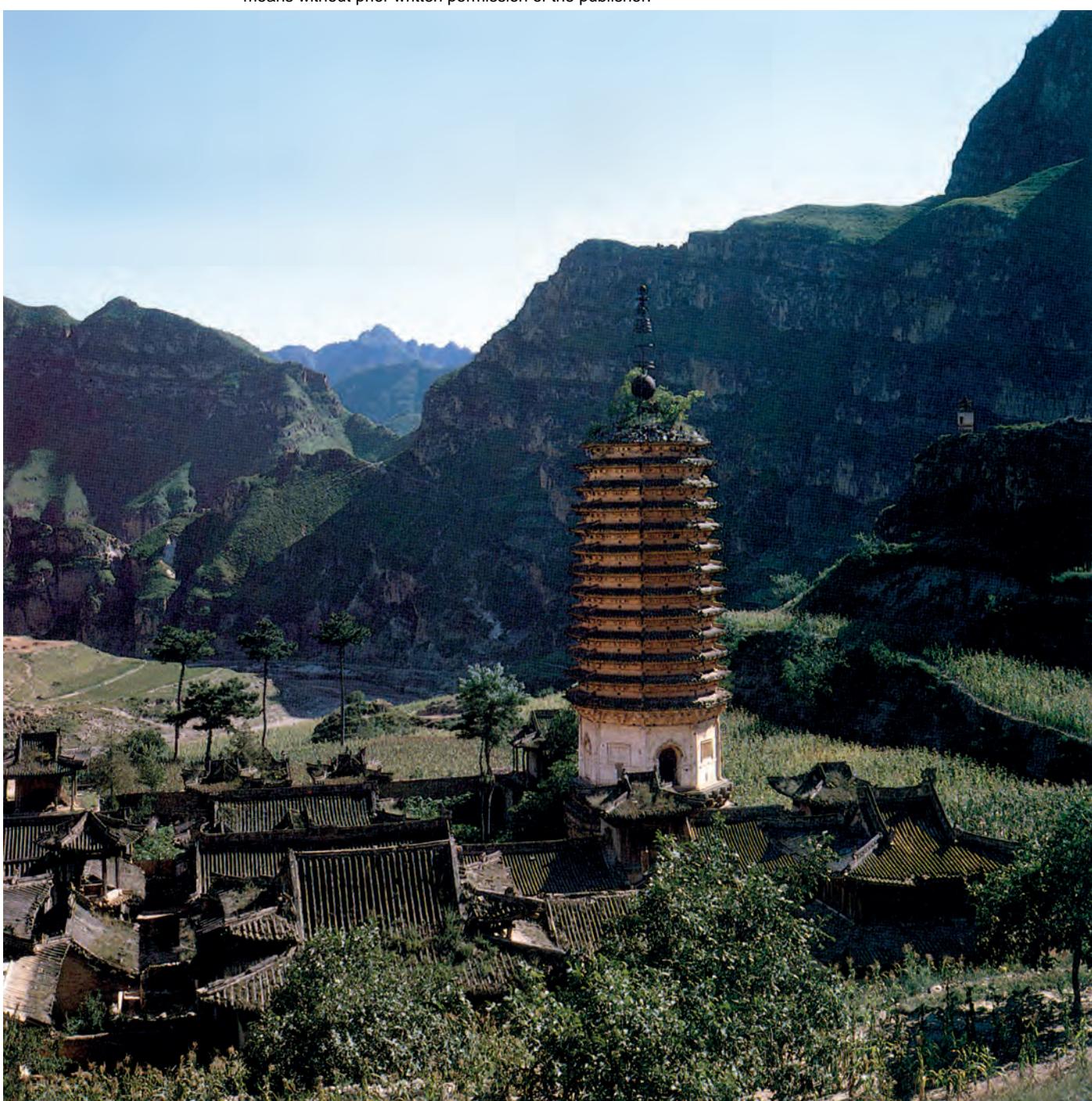
The sixth feature is modularity, as important in building complexes as it is in individual buildings. Whereas a piece of a bracket set or dimension of a column or bay may guide the rest of the measurements in a building, in the Forbidden City the width of the Back Halls behind the Hall of Supreme Harmony cluster is half the width of the Three Great (or Front) Halls that include the Hall of Supreme Harmony. Almost all imperial building complexes in Beijing are based on modular dimensions.

Rank, the seventh feature, is as much an aspect of building complexes as it is of individual structures. Just as the roof and its decoration indicate a building’s rank, the positioning of buildings according to formations such as the *gong* plan signify a complex’s importance.

The final feature of Chinese space is privacy. It is achieved by four-sided enclosure and by gates. The private space, sometimes a garden, is where one may find a pavilion or other structure that breaks out of the standardized, modular system. Private space and its architecture are visible only to a select, personal audience.

Siting, sometimes referred to as Chinese geomancy, a translation of *fengshui*, may also be considered a feature of Chinese space. The most difficult to articulate, implicit in the initial selection of a building site, is that it be in accord with the natural forces, specifically mountains and water. Often protective mountains, sometimes just artificial hills, are at the back of imperial construction, and often a water source is in front or runs through it.

And so the Forbidden City and countless smaller, less elaborate Chinese buildings have symbolized China and been replicated for millennia. That many of those buildings survive in Beijing is in part because the city has been a Chinese capital almost continuously since the tenth century. Xi'an, known historically as Chang'an, was a primary capital for more than five



i.8. Jueshan Monastery, Lingqiu, Shanxi, ca. eleventh century

hundred years. Luoyang and Nanjing have histories as capitals that are as long. These four cities are the locations of nearly all the buildings discussed in certain chapters of this book.

Upon the establishment of the People's Republic on October 1, 1949, archaeology became a state-sponsored enterprise that made it possible to write China's early architectural history. Until then, the study of architecture before ca. 800 relied heavily on extrapolation based on architecture above ground and facsimiles of architecture on a small scale or in the form of painting (see figure i.5). The most famous tomb in China, in Lintong, today a suburb of Xi'an, which belongs to the First

Emperor, is one of hundreds of excavated sites through which the more than seven thousand years of Chinese architectural history are written. This very early architectural history, which could not have been written seventy years ago, is more detailed than it was twenty years ago, and is most likely to be altered by new discoveries in the next decade, is where we begin.