



In the Global Village of Our Time Oriental Wisdom Is Timeless

Characteristics and Values of Chinese and East Asian Architectural Heritage

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Abstract. Today, at a time of economic globalization, there are enormous challenges for humanity: achieving reasonable and dialectic relationships in the midst of paradoxes and contradictions; seeking an integrated view on ecological issues in this man-made environment; devising flexible methods for dealing with difficulties; and to treasure intangible heritage. The values shown in Oriental heritage, and analyzed in this paper—values which are different from Western ones—may help humanity to discover another wisdom or methodology suitable to our time.

Keywords: Characteristics · Value · China · East Asia · Architectural heritage

1 Time Is Critical for Protecting Cultural Diversity

Globalization has changed the whole world deeply—in the areas of economy, policy, culture and education—benefiting many countries, but also challenging all countries. People assumed that global economic development would correspond to improvement of the life of our planet, and that scientific and technological achievement would push our globe forward. However, the whole world today faces a host of crises: in energy, environment, religion, and culture.

The international community responding to this situation has held meetings to discuss these challenges. In particular, the UNESCO General Conference in 2001 (which took place just two months after 9/11) issued a most significant and historic document: the Declaration on Cultural Diversity. Reflecting the conscience and will of humanity, this document stated that:

Culture takes diverse forms across time and space. This diversity is embodied in the uniqueness and plurality of the identities of the groups and societies making up humankind. As a source of exchange, innovation and creativity, cultural diversity is as necessary for humankind as biodiversity is for nature. In this sense, it is the common heritage of humanity and should be recognized and affirmed for the benefit of present and future generations.

In accord with this declaration, in this paper I offer my analysis regarding the value of one of the world's many cultures: the value of Chinese and East Asian architectural heritage.

2 Essential Characteristics

The countries of China, Korea and Japan have been in cultural communication since ancient times, each having its own identity while sharing some aspects of their cultures, including their architectural heritage. The characteristics of Chinese architectural heritage which I will introduce in this paper can be found in the architectural heritage of Korea and Japan as well.

These characteristics have been summarized by Chinese scholars from different points of view: Li Yunhe 李允彞, a senior architect established in Hong Kong, pointed out some interesting features of such heritage, especially in terms of design, in the 1980s; Zhang Qinnan 张钦楠, a senior scholar, emphasized that great achievements were made in traditional Chinese architecture regardless of poor availability of natural resources availability; Professor Pan Guxi 潘谷西 who was the editor of the university textbook *History of Chinese Architecture*, in its sixth edition, provided six key features ranging from materials to administration systems.

Based on their analyses and focusing on the new challenges of our time, I have summarized six characteristics, considering not only material but also immaterial or metaphysical aspects.

2.1 Wood Frame Construction

The choice made by most ancient Chinese to use wood as their basic construction material, after a considerable number of wars and periods of social chaos, is not due to any single factor such as availability of rich forest resources. Rather, it came from their philosophical attitude toward nature—as agriculturalists—who appreciated the faster process of cutting and constructing with wood, in addition to the social need for cooperation under centralized rule. In general, an entire house was constructed using a wooden frame system consisting of columns, beams, purlins and rafters, with the walls and the roof attached to the frame. This frame system is considered to be similar to the contemporary steel structure system, although they belong to different ages and differ radically in their technology.

2.2 Standardized Methods of Construction

As has been the case in most countries and eras, the rich build better houses than the poor, so unsurprisingly, the royal architecture of ancient China used superior materials.¹ The historic Song dynasty produced the famous work of architectural construction standards *Yingzao Fashi* 营造法式 which separated all royal buildings into eight classes, and specified the particular types of elements permitted to be used in each of them (Fig. 1).

¹ It is worth noticing that in the 10th century the central government of China required all royal constructors to use materials graded according to the building's size, that is, graded according to its importance and rank, as established by legislation.

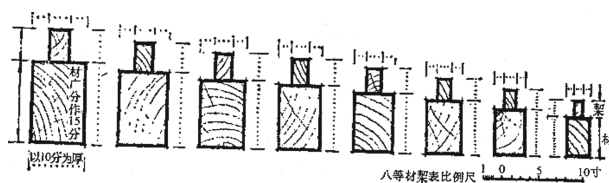


Fig. 1. List of proportion standards concerning the eight classes of wood elements mentioned in the *Yingzao Fashi* 营造法式, a historical document concerning construction standards in the Song Dynasty. Source: Pan Guxi, from his work *History of Chinese Architecture*, 6th edition.

2.3 Large Complexes Derived from Simple Small Units

The span of wood beams is less than that of the Western arch and dome, so the size of single buildings in China and East Asia has been correspondingly smaller than the masonry buildings of ancient Europe. Nevertheless, the stunning oriental architectural achievement has been their creation of large complexes composed of buildings with courtyard spaces connected by corridors, walls, terraces and other small environment articles, while being restricted to the use of only small, simple units of building (Fig. 2).



Fig. 2. Satellite image of part of the Forbidden City in Beijing. Source: Baidu Map (<https://lbs.amap.com>).

2.4 Inward-Looking Courtyard Spaces

For thousands of years, China's agricultural society relied on successful harvests and regular climate conditions for their prosperity, which motivated families to protect their settlements by constructing walled courtyards for themselves (Fig. 3).

In this evolution, the interior space of the courtyard was more important than the exterior natural space- it became the buffer zone between interior living space and exterior natural space. This arrangement furthered the custom of enjoying introverted space.

2.5 The Basis of Yin-Yang

To the agricultural society, the regularities of climate, nature or geography were essential for life, therefore all of humankind followed it and were influenced by it including the

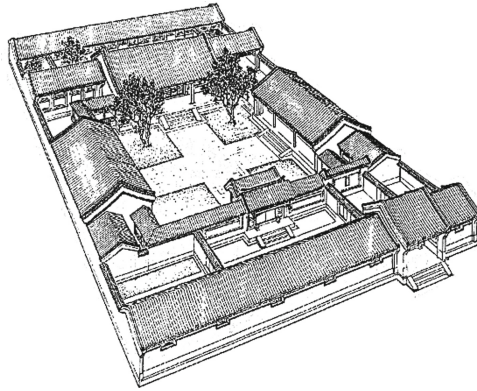


Fig. 3. The typical courtyard of traditional residences in China. Source: Pan Guxi, from his work *History of Chinese Architecture*, 6th edition.

human body (which today we call the biological clock). Ancient Chinese sages believed that there was only one powerful regularity which controlled all of the world, or “heaven” (which in the Chinese context means “nature”) and humanity, all living together within one world. If one understood this concept, then they would understand all things, as well as the changing rules between them.

Two thousand years ago, this knowledge was summarized by some sages, and it was called *I Ching* 易经, later simplified to the secular terms of *Yin* 阴 and *Yang* 阳. This kind of idea formed a deep cultural sedimentation in the minds of the Chinese and influenced and directed them on how to act in their daily life and work. Using this idea, the construction of traditional houses and building complexes in China followed four main steps: observing and investigating the environment, and analyzing the positive or negative influences brought forth by climatic and geographic conditions; then there is the determination and selection of the site; then follows the general arrangement and planning of the buildings; finally there is the stage of detailed building design and construction (Fig. 4).

For example, there is a garden (网师园) in Suzhou with site plans where its layouts are similar to the diagram of the *Taiji* 太极.²

All four steps reflect the same principle: to consider the relationship of mankind and nature, and arrange them into mutual coexistence. In some specific areas such as gardens, we find that it was here that the more idealized thoughts of ancient intellectuals were realized, and therefore, they show the influences of a prolonged cultural sedimentation.

2.6 Harmony

The aesthetic phenomena of East and West are distinctly different in their principles. For example, in Europe an addition to an existing building would be designed so as to be ‘distinctive’, to stand out, whereas to the Chinese, the first principle would be to harmonize it with the pre-existing part.

² Zhu (1988).



Fig. 4. Three examples of Chinese gardens: Summer Palace in Beijing, Ji Chang Garden 寄畅园 in Wuxi and Wang Shi. Source: author.

Where principles regarding the highest standards of art are concerned, both East and West look at these differently too. For example: the West, following the classical period, generally adopted the principle of ‘truth’, but for the Chinese, the artistic atmosphere which offers an ideal feeling about the art is that which is to be enjoyed, whether or not the object is portrayed realistically.

3 Embodied Values

In the past century, China’s construction system completed the process of transferring from the traditional wood system to the contemporary system of concrete and steel. Wood disappeared from general use as structure: it reacts poorly to fire, and is no longer readily available for cutting in China’s forests. Some universities stopped teaching courses on both wood structure and traditional architecture. For these reasons, traditional architecture has been in decline. Only in this century, with the spread of the heritage conservation movement—especially regarding intangible heritage—have such conservation activities awakened people into learning about and knowing the treasures lying around them.

It is true that if we know the traditional construction process of Chinese architectural heritage and analyze its details regarding the six characteristics mentioned above, we will find the ideas and wisdom of both China and East Asia, such as those described below, reflected in interesting phenomena which are as relevant to us all today as they were in the past.

3.1 Welcoming Paradox

An interesting instance concerns the *dougong* 斗拱, a Chinese structural bracket placed on top of columns to support the eaves (Fig. 5). It is often defined as a symbol of Oriental architecture because it was used in temples, government buildings and other important buildings in China, Korea and Japan in ancient times.



Fig. 5. Clusters of brackets under the eaves of a wood pagoda in Ying 应 county, North China. Source: author.

Clusters of brackets form *dougong* which are of two types and of two dimensions: one type is vertical to the façade, and the other is parallel with the facade. The first type carried the load of the eave and was structural, carrying the bending moment; the second type was less important since its function was to stabilize the cluster by connecting with other elements.

When both types were put together to form a cluster, each element had to be partially cut—for instance, each was cut half of one section. The largest bending moment was carried at the place of the element where its section was the smallest. So this appears to be a paradox (Fig. 6).

This seems to be unreasonable and not scientific, but it had to be so in order to form the joint. The wisdom of the ancient craftsman was that he cut both types of dougong using different specific proportions—the vertical type being cut less—while at the same time moving the point of the bending moment ahead by using another big element (*ludou* 栌斗 or *jiaohudou* 交互斗). Thus, the result of the carpenter's great skill at such details was near-perfect! The enlightenment that one may gain from this example is that the Chinese traditional construction system was formed not on an ideal and scientific foundation, but rather, it developed along a sort of experiential approach—from practice.

Paradox is not escapable in the real historic process. It's an exception which always exists: not logical, but experiential.

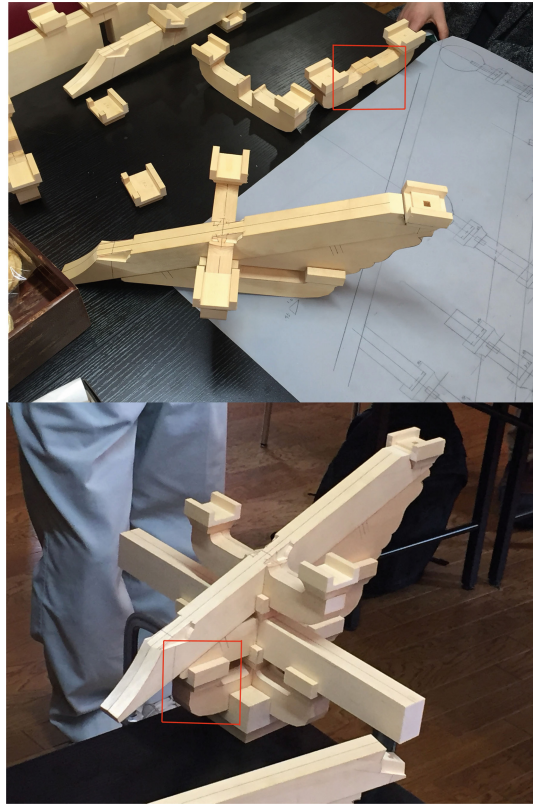


Fig. 6. Some parts of a *dougong* prepared for assembly (upper image). In the lower image, we see a cluster of *dougong* after assembly (the circled area is the *huagong* 华拱, vertical to facade). Source: author.

3.2 Holistic Approaches

Holistic thinking was inherent in the ways of the past—perhaps an example for us today, who may argue about what kind of building is ecological, whether steel or concrete, or are planning to reduce building rubbish by designing long-term houses with a 600 years’ lifespan. In old China, the construction materials were recyclable, which were earth and wood (and thus forming the so-called “earth and wood works”). Many minority villagers built their houses from sections of forest which they owned for just that purpose, until sixty years ago.

Furthermore, the holistic thinking of ancient Chinese sages created a system of 64 elements to symbolize the things in the world, in order to describe the relationships among them—i.e. the *I Ching*. The relationships were often more important than the individual elements. In this sort of ‘integrated thinking’, the first stage was always about relations: finding the position of the element within the system. Deep analysis awaited this first step. The relationship was to be maintained, but the treatment of the elements followed the actual, changeable environment.



Fig. 7. Tiles decorated with four images of sacred animals associated with cardinal directions. Source: Wubo Stock Imagery 武博专辑, *Huī táo sì shén huàxiàng zhuān* 灰陶四神画像砖,

Buildings were related to a system too, namely to the natural elements around them in regard to site selection and orientation. An important building complex was generally oriented so that it showed its back to the north (turtle and snake), faced south (bird) and had a major landform to the east (dragon), being higher than that to the west (tiger). The compass points were another system, where four sacred animals were selected to symbolize four orientations: dragon for east, tiger for west, bird for south and turtle with snake for north.

An utterly different approach is that taken by the West. The contemporary scientific and educational systems of all the world's universities, based on European civilization, go all the way back to the Renaissance, when the model was formed for an independent system of education and academic research, and the knowledge system was organized by dividing it among various disciplines. This has brought about technical progress and economic wealth to the world in this century. However, people trained in constantly-separated disciplines often find that their knowledge falls short in the midst of our ever-changing and challenging world.

Every expert, being an expert in only the field of his/her discipline, when confronted with certain conditions, finds his/her fragmented thinking of little use for solving real, complex problems. More experts are needed with a sort of global view; a new thinking model for integrating different disciplines and comprehensively solving problems. In other words, we need experts whose contribution is not only skill or a technique, rather than chief experts (Fig. 8).

Such integrated thinking, when put to the task of revealing secrets of tangible heritage, can expose the power of intangible heritage.



Fig. 8. An astronomical map carved in 1275 on a stone tablet in Suzhou. Source: author.

3.3 Dialectically Thinking About the Intangible

It is just recently that intangible heritage has been introduced into the world heritage conservation movement. When it became included in the movement in China, many cases of intangible heritage were collected and nominated to the world heritage list.

One of UNESCO's general conferences led to the creation of the *Convention for the Safeguarding of Intangible Cultural Heritage*, which referred to several fields that must be satisfied in order to gain admission to the list.³

However, in Chinese there are two translations of the term “intangible heritage”, each with a different emphasis. The first is ‘cultural heritage that is *non-material*’ 非物质文化遗产, and the second is ‘cultural heritage lacking a defined form’ 无形文化遗产. The second translation reflects the tendency of Chinese culture to especially care about relationships between general phenomena and things—about ideological and philosophical heritage.

From the earliest times Chinese have recognized the value of the ‘intangible’. The famous philosopher Laozi 老子, around the fifth century BC, in his classic book *Daodejing* 道德经 explained that clay is fashioned into vessels but it is on their empty hollowness that their use depends; and that doors and windows are cut out of the walls to form an apartment, but it is on the empty space within that its use depends.⁴ Similar to this emptiness that Laozi mentioned is the ‘emptiness’ found in architectural heritage. One clear example of this is the Heaven Temple in Beijing where the most sacred place is

³ Cf. UNESCO's *Convention for the Safeguarding of Intangible Cultural Heritage*.

⁴ See the 8th chapter of Laozi's *Daodejing*.

not the actual building, but rather it is the open-air altar for the worship of heaven—an empty place where one can be in touch with nature and the sky.

Another significant example is the ‘emptiness’ aspect found in the central axis of Beijing’s central plan as well as the plan of the Forbidden City complex. Unlike the city plan axes of Rome and Washington, their axes are not geometric (which are best perceived from the sky), but are rather to be experienced and enjoyed as walkers do, along a line on the ground which might be bent or curved, in balance with nature (Fig. 9).



Fig. 9. The central axis of the Forbidden City, Beijing. The axis directing to the north part of it was reinforced in the 1950’s by the erection of new buildings along both of its sides. Source: courtesy of the Beijing Municipal Parks Administration Center (北京市公园管理中心)

As an example for all to see: a reflection from Chinese philosophy regarding the oneness of all in this world and with the cosmos, the central axis of Beijing continues to demonstrate its importance to the city plan, with buildings having been erected along both sides of it from the 1950’s until today.

3.4 Adjusting with Flexibility

For Chinese it is normal that disasters sometimes happen: they are part of the order of nature. As opposed to the stable and regular changing of the four seasons and twelve months, they are irregular and happen suddenly—randomly. So the response to them needed to be flexible. The history of China is full of records of disasters and the struggles waged with them. Over the thousands of years through which Chinese culture sedimented within a natural and social environment, its necessary readjustments to its unique natural

environment also determined its unique culture, making it work for the critical future of the world.

The most important region for the development of early Chinese civilization was around the area known as the ‘mother river’ of China’s culture, the Yellow River. With its constant eroding activity and form-shifting, there has been no river in the world like the Yellow River, which is always requiring adjustments to its movements, and true flexibility in response to it (Fig. 10).



Fig. 10. An 18th-century map showing the dyke works of the Grand Canal, at the juncture point of the Grand Canal with the Yellow river. It was drawn by the Minister of Flood Defense and submitted to Emperor Qianlong 乾隆. Source: National Palace Museum (2012). Courtesy of the Palace Museum in Taiwan.

Every year it carried a great amount of earth from its upper reaches to its lower reaches, forming a broad plain in north China, favorable to the development of agriculture there. At same time, however, its river bed rose up, so that in some places it was higher than the land on both sides of it. When the rainfall (which historically has never been even) intensified every several hundred years or so, the river flooded and broke the dykes, with its river bed moving to another lower place, therefore changing shape and bringing disaster. Chinese civilization was created in this environment.

Today our world is changing so fast, with disasters happening every week, in a similar way to ancient China; therefore it is necessary to give importance to flexible and ‘unordered’ working methods, and foster a spirit that is constantly learning from changing circumstances by intuition, not by pure rationality. The famous Swiss psychiatrist Carl Jung said in the foreword of the translation of *I Ching*,

If we leave things to nature, we see a very different picture: every process is partially or totally interfered with by chance, so much so that under natural circumstances a course of events absolutely conforming to specific laws is almost an exception.

4 Conclusion

China and other East Asian nations have been transforming from agricultural into industrializing countries for the last one hundred and fifty years. The younger generation has made great achievements in learning since the start of China's 'open and reform' policy of the 1980s. However, the 'fragmented thinking' model underlying it poses a serious problem for China, now more than ever before—even more so than for the West.

There is a truth we have to tell, a new option we can share. There is a treasure in the history of East Asia, in its various forms of heritage that is eminently worth researching. New research into tradition—not as a retrograde step—may lead forward to the East and West combining the advantages of their cultures, so as to face worldwide challenges.

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