Australian Journal of Basic and Applied Sciences, 5(10): 1561-1565, 2011
ISSN 1991-8178

Physical Order and Disorder in Chinese Architecture Style

[1]Saeid Rahmatabadi, [2]Reza Toushmalani

[1]Department of Architecture, Borujerd Branch, Islamic Azad University, Borujerd, Iran.
[2]Department of Physics, Borujerd Branch, Islamic Azad University, Borujerd, Iran.

Abstract: China's unique architecture is an important part of China's brilliant civilization and with Western and Islamic architecture comprised three big architecture of the World. Chinese architecture is the world's unique system that the main structure is wooden. Which it is manifested deep moral principles, beauty, viewpoint, value and nature of Chinese. Generally Chinese architecture includes temples (Confucius, Lao-tse, and Buddhist) pagoda, palace, Great Wall of China, home and Cathedrals, Graves and rock temples (caves).The essential components of these buildings include: a square hall under a sharp tip roof with prominent cornices, on maintenance with wooden pillars which walls has no role in maintaining the ceiling but its duty is like drapes and separating curtain walls. In religious buildings either Pagoda or temples we can see two specified style of architecture these two styles usually called north and south. Max Bense who is one of the founders of informative aesthetic believes that, order has three degrees: chaos, being structured and being shaped. When we consider complete chaos that there are no regulations for connection between different components. In this case the possibility of prediction equals zero and innovation in maximum. Definition of being structured is one organized order with a structure that might have different forms. Bense calls the third part of order as a "chaos or disorganize order". In all three factors above replacement of components affected by a general organization whatever the rate of order is more and this order is more complicated, the informative content is less. In this paper first we have introduced this style briefly, we described order and disorder in the architecture and we have analyzed Evidences of order and disorder in this style.

Key words: Physical order and disorder, Chinese architecture style, Evidence.

***Architecture in China*:**
3rd Century B.C. to Present Day:
Geographical:

The Republic of China, comprising twenty-three provinces and the autonomous regions of inner Mongolia and Sinkiang-vigur, covers an area larger than the whole of Europe and equal to nearly one-thirteenth of the total land area of the world. The country is mountainous, with extensive fertile valleys in the middle and South-east, and great plains in the North. The many excellent harbours promoted maritime contact with Southeast Asia in early times and with the west during the last two centuries.

Historical, Social and Religious:

Of a succession of emperors, the most outstanding was the great YAO who with his successor shun, stands at the dawn of Chinese history as a model of all wisdom and sovereign virtue. The dynasties Hsia, Shang or YIN followed until the Chou and first emperor Wu Wang, started an era of great expansion of culture and territory; but expansion brought disintegration; the power of central government declined and feudalism flourished; resulting in the break-down of the Empire into a number of warring states.

In the sixth century B.C. this political deterioration seems to have contributed to the emergence of theorists, thinkers and schools of philosophy. Among these, confucius sought to bring a new order by his code of Ethics and education, and contemporary with him was Lao Tzu, founder of Taoism. Shih Huang Ti, styled himself feas the first emperor, and founded a new and homogenous empire on the ruins of the old feudal system. He divided the Empire into thirty-six provinces, and built a vast palace by forced laborer at Hsien Yang; he also constructed by forced and convict labour fortifications including part of the Great Wall against barbarian invasion.

Corresponding Author: Saeid Rahmatabadi, Department of Architecture, Borujerd Branch, Islamic Azad University, Borujerd, Iran.
E-mail: Atomicboy_reza@yahoo.com & Saeid_gh_rahmatabadi@yahoo.com

Foreign traders came by land and sea and Chinese goods were on sale in Baghdad; but the Chinese were forbidden by imperial rescript from going abroad, and their architecture consequently suffered little influence from the expansion of trade. Buddhism reached its peak and stimulated the arts and influenced architectural form; painting probably reached the highest point in Chinese history with an emphasis on calligraphy and the use of the brush printing was introduced; the first Ming Emperor was Hung-wo, he established his capital at Nanking and his successor Yung-Lo founded the Northern capital Peking, and laid out the city as one of the outstanding architectural conceptions of the world.

CHINA

The ban on foreigners was lifted, and penetration by Jesuit missionaries initiated a gradual infiltration of western culture and ideas, which eventually transformed the social structure of the Empire. England's declaration of war against China in 1840 marked the beginning of active European intervention. In 1873 foreign minister secured the right of audience with the Emperor so the Chinese the westerners were barbarians, and their ideas and influences strongly resisted. But after the formation of the Republic in 1912, China adopted the calendar of the west and began to introduce a system of education substantially inspired by American theories. The old culture and philosophies yielded to western methods, and industrialization gained a tentative foothold.

The main religious and ethical influences in China have been Confucianism, Taoism and Buddhism. Confucianism was a new code of social conduct and a philosophy of life; it was not a religion as we understand it; it laid stress on the family and ancestor warship; it was a doctrine of the 'middle way'. Taoism attempted to transcend Confucianism and was founded by Loa Tzu who offered a doctrine of universal love as his solution to social disorder.

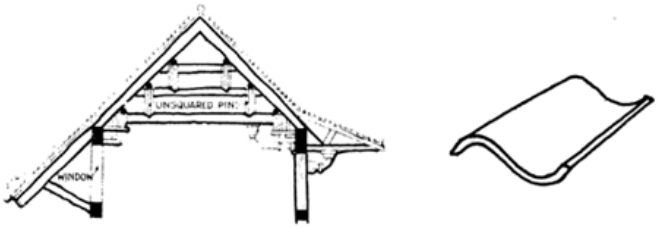
Architectural Character:

Of the fine arts as understood in the west, only painting was recognized by the Chinese; sculpture architecture and the crafts were regarded as artisan work. The art was poetic rather than material; the Chinese revelled in the beauty of nature and had little feeling for architectural design. The Chinese had little religious zeal, and therefore few great temples; no territorial aristocracy and therefore no noble country houses.

The Roof was the chief feature, supported on timber uprights and independent of the walls which were often useless for support as were the large traceried windows of the European Gothic style. The Chinese roof-ridges are laden with elaborate ornamental cresting and the up-tilted angles are adorned with fantastic dragons and grotesque ornament. It is considered a sign of dignity to place roofs one over the other and this system also serves to protect the interior from extremes of heat and cold. Roofs which are concave in section are generally covered with enamelled tiles of S-shape (Pantiles) set in mortar, which is also used to form cover joints as a protection from the driving winds.

The roof framing consists of a system of trusses in rigid rectangles (not triangles as in Europe) formed of bamboos held together by wooden tenons, and thus the weight of the roof acts vertically and no oblique thrust comes on the walls. The lightness and strength of bamboos were important factors in influencing a system of different construction. The connection between the roof and pillars which sustained it is often strengthened by brackets, and the soffits are often divided into square or octagonal coffers by means of raised ribs with brass socketings at their intersection.

The use of bright colours, applied in the for of Chinese buildings. Glazed tiles and porcelain is characteristic of the colours were symbolic of Chinese rites.



Pai-Lou (a Chinese ceremonial gateway erected in memory of an eminent person). Of stone and wood are features and basic symbolic structure of Chinese architecture sometimes entrances to temples and tomb, sometimes as monuments to the dead, and sometimes to stand accross a street. They consist of two or more upright posts with horizontal frieze, making one, two or three openings, sometimes surmounted by a series of brackets like those under temple eaves.

The Chinese built mainly in timber; brick and timber were sometimes combined and most wooden buildings are raised on a stone or brick platform as a protection against damp, while stone was reserved for special structures and the walls of important edifices. Bricks sometimes have a glazed colored surface and walls are also faced with glazed tiles or majolica. Walls are often constructed hollow, thus saving on materials and effecting a more equable temperature in the house.

Doorways are square headed, but varied in outline by fretted pendants from the horizontal timbers. Windows are of similar form, suiting the rectangular framing of timber posts or the lashing together of bamboos. They are frequently filled in with the lining of the oyster shell, which is as transparent as talc and admits an effective subdued light. Rice paper was also used instead of glass in windows.

CHINESE building procedure as applied to columns is peculiar and is the reverse of that in other countries. Instead of first raising the columns and framing the superstructure upon them, the Chinese made the framework of the roof, and this determined the position of the columns, which were often of nanmu wood, while the rigidity of the framework and roof-beams was relied on to keep the columns in position on the stone foundations. In short instead of putting the roof on the columns, they put the columns under the roof. The roof-beams were supported brackets and tenoned direct at the various heights into the shaft. Columns were without capitals.

Chinese ornament expresses national characteristics color schemes form an integral part of Chinese architecture; roofs are covered with brightly glazed tiles in symbolic colours, while the outstanding ridges and hips are emphasized with highly colored dragons, fishes and grotesque figures in glazed terra-cotta.

The major characteristic of Chinese architecture which is on the bases of deep cultural traditions is coming as follows:

- First, because the idea of highlighting priority of imperial power over another things and achievement resulting theory has move in programming for cities and palaces.
- Second special attention has been to beauty of complex so in major arrangement of architectures the connection of houses and their courtyard is the way that both sides act like mutual leverage.
- Third harmony of nature and higher level architecture has been particular attention. In China' story in the field of art, style and methods of construction and designing architecture with exchange to abroad have given great importance and this issue has affected the architecture of Japan, Korea, Vietnam and Mongolia.

Today, Chinese contemporary architecture at same time with maintaining it traditional style has used artistic characteristics of west and has combined it with Chinese traits and has reached continuous achievements.

Physical Order and Disorder in Architecture:

The architecture is composed of different part. The connection between these components has been organized. It means that all these components are subsystem of an organism. This system or organism might be very simple or complicated. Max Bense who is one of the founders of informative aesthetic believes that, order has three degrees: chaos, being structured and being shaped. When we consider complete chaos that there are no regulations for connection between different components. In this case the possibility of prediction equals zero and innovation in maximum.

Definition of being structured is one organized order with a structure that might have different forms. Bense calls the third part of order as a "chaos or disorganize order". When we talk about this order that in which all materials have been replaced that displaying the choices have been picked up freely and in united system.

In all three factors above replacement of components affected by a general organization whatever the rate of order is more and this order is more complicated, the informative content is less .But we should not think that more complication equals chaos automatically. This order couldn't be recognize easily and could even cause mistake. More order equals less innovation .In complete chaos the probability of all components are equal, so squandering information equals zero and in consequence the possibility of new combination or maximum creation is possible.

Continuing of a style is in connection with order and squandering information and not to be with innovation. The contrast of styles comes from the difference of its components and its dominated order .In this case they have been more or less complicate and by means of that they have been connected by viewer or user. For example in Indian temples in India there is an order that they are not identifiable at the first glance because their components are almost complicated.

Order means obligation automatically. Whatever this order is sever the open space is less so it could be remained for the variety of components. And each part should obey these rules more and more. In a case that some these parts couldn't even do their main task and in reverse a kind of complicated order creates more freedom and this freedom creates more open space for forming the components and causing opacity. The two kinds of orders, of course, have some exceptions just in a condition that the main factors of organism stay stable and without changing.

Buildings which are in order and are not flexible give us less freedom. In the other word changing one factor in this system could hardly possible. But in the opposite, these architectures give us their messages very clear and straight and nothing for personal interpretation for buildings with complicated order the issue is something else. Here in this case, we are completely free to act. Personal interpretation and opacity are possible. Such building expects us to be more active. We ourselves should discover the order of that and also search for its system. We can compare this building with Picasso's painting named Guernica. In there also this is viewer wants to comprehend the painting and this is also the viewer who is obliged to search about the organism and thoughts, problems which lay behind of the painting.

Architectural styles of Mies van der Rohe and Venturi are eventually the same (Spectrum). The contrast between the two even influenced the choice of materials. But which one of these two styles is better or more beautiful?

For answering this question it would impossible find a definite answer. As we will see the value of aesthetic of objects could be measured or adjusted. This value equals with the consequence of the division of order by complication. Whatever a building is more complicated its organism should be more expanded that we will be able to find a measurement for its aesthetic.

Buildings with severe order like many of Mies van der Rohe's works, either gives no opportunity to complication or it ends to chaos. In the other words, the Robert Venturi's open order needs complication that wouldn't be naively.

The important note is that in each style should be equivalent between complication and relevant order the comparison between two styles is impossible. We couldn't consider any style as the best in architecture absolutely.

But which or who make it clear that how the dominated order should be, simple or complicated?

In T .Munro's opinion that: the complication in an organism continuously being increased in an art till it makes studying harder occasionally. The consequence of this hardship is the general turning point and return to a more simplified organism. The trueness of this Munro's idea could be confirmed by informative theory.

Peter smith proves that during architecture history, one phase with three steps is really recognition which has been repeated several times.

- A severe and distinct order dominates in first step. Coordination and simplicity has basic role in this era.
- The main characteristic of second step is tension.
- Lack of clarification and seduction are the main traits of third step. Order in here is that complicated which we are approaching to the maximum capacity of our conceptual.

There is a direct connection between the rate of regularity and division of information to semantic and aesthetics quota of semantic information and with the same ratio the effect of wisdom on emotion will be more and vice versa: when aesthetics information has had more quota or order is more complicated emotion dominates on wisdom.

An introvert person who is rationalist basically prefers the clear order and extrovert person is more emotionalists and prefers the complicated order more.

Evidences of Order and Disorder in this Style:

In this kind of architecture that beauty is without glory and majesty. Color dominates on form and construction not only doesn't impose itself on nature but both with the each other create a harmony and from other traits can indicate as follows:

- Confucius was the missionary of loyalty and discipline and respect. His philosophy was based on Zen which means fondness and kindness and empathies.

Lao-tse Was the Founder of Taoism:

Human is a part of the universe and should keep the harmony with it completely. Both thought are based on order and adaptation with nature and environment around.

- In Chinese architecture works, as a result of using less durable materials have been ruined which this issue indicates to create of a kind of tendency to entropy and disorder in these works.
- Chinese houses promoted from excavations to houses about 3 to 5 blocks together in one row which this promotion has a kind of tendency to create more order.
- The building in china today is very similar with the one being existed exactly thousands of years ago. (Tendency to order and prevent of disorder)
- Special attention has been to beauty of complex so in major arrangement of architectures the connection of houses and their courtyard is the way that both sides act like mutual leverage
- Harmony of nature and higher level architecture has been particular attention.
- Residential buildings "Siheyuan" with wide, vast and square courtyard, pacific and intimate and environment beautiful and organized flowers and trees to be consider very ideal life atmosphere.
- Symmetry to middle axis and buildings' arrangement to be seen around courtyard in each Chinese temple.

Conclusion:

In this kind of architecture that beauty is without glory and majesty. Color dominates on form and construction not only doesn't impose itself on nature but both with the each other create a harmony and from other traits can indicate as follows: His philosophy was based on Zen which means fondness and kindness and empathies. Human is a part of the universe and should keep the harmony with it completely. Both thought are based on order and adaptation with nature and environment around. In Chinese architecture works, as a result of using less durable materials have been ruined which this issue indicates to create of a kind of tendency to entropy and disorder in these works. Symmetry to middle axis and buildings' arrangement to be seen around courtyard in each Chinese temple.

REFERENCES

Ching, Francis D.K. and *et al*, 2006. A Global History of Architecture.

Field, D.M., The world’s greatest architecture past and present.

Fletcher, Banister, 1996. A History of Architecture, ed. by Dan Cruickshank. Architectural Press.

Grutter, Jorg Kurt, 2008. Asthetik der Architektur: Grundlagen der Architektur Wahrnehmung, Fourth Translated Edition (Persian, Iran).

Marian Moffett and *et al*. A world History of Architecture, 3rd Edition.

Salvan, S. George, 2005. Architectural character & the history of architecture, Goodwill Trading Co., Inc.

Shateriyan, Reza, 2008. Acquaintance with Form and Space in Architecture, First Edition.

Zarei, M.E., 2010. Getting To Know World Architecture, Ninth Edition.