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YIN AND YANG — PHILOSOPHICAL EXPRESSION OF CHINESE ARCHITECTURE

Yin and Yang philosophy can be said to be the most basic and core content of traditional Chinese philosophy. It has been extensively expanded and applied in different fields, and has profoundly affected all aspects of Chinese traditional culture. In addition, the specific operation methods and guiding principles expounded by Feng Shui (Feng Shui Theory) of Yin and Yang have a spiritual impact on architecture. This is the most profound semantics of traditional Chinese architecture and has been running through thousands of years. Yin and Yang are opposites and complementary. In order to express the philosophy of yin and yang, traditional buildings usually use opposing but complementary architectural language or images, such as the coexistence of main and auxiliary colors, and the juxtaposition of virtual and real. Compared with traditional architecture, modern architecture is a completely different language. Modern architects no longer use the traditional “yin” and “yang” words to express the thinking process in the design, but use other vocabulary and even foreign languages and grammar to express the “opposite and complementary” artistic conception. Based on the works of three Chinese architects, this paper expounds the expression of “opposite and complementary” in modern architecture from the perspectives of multiple contrast, integrity and slightly variable density.

Keywords: Yin and Yang, philosophical expression, Chinese traditional architecture, Chinese modern architecture.

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ИНЬ И ЯН — ФИЛОСОФСКОЕ ВЫРАЖЕНИЕ КИТАЙСКОЙ АРХИТЕКТУРЫ

Категории Инь и Ян, можно сказать, являются основой традиционной китайской философии. Они применялись в различных областях и оказали сильное влияние на все аспекты традиционной китайской культуры. Кроме того, конкретные методы работы и руководящие принципы, изложенные в фэншуй (Теория фэншуй), Инь и Ян, оказывают духовное влияние на архитектуру. Это самая глубокая семантика традиционной китайской архитектуры, которая существует на протяжении тысячелетий. Инь и Ян противоположны и дополняют друг друга. Чтобы выразить философию Инь и Ян, традиционные здания обычно используют противоположный, но взаимодополняющий архитектурный язык или образы, такие как сосуществование основных и вспомогательных цветов и сопоставление виртуального и реального. По сравнению с традиционной архитектурой, современная архитектура — это совершенно другой язык. Современные архитекторы больше не используют традиционные слова «инь» и «ян» для выражения мыслительного процесса в дизайне, но используют другую лексику и даже иностранные языки и грамматику для выражения «противоположных и взаимодополняющих» художественных концепций. Основываясь на работах трех китайских архитекторов, в статье излагается выражение «противоположного и взаимодополняющего» в современной архитектуре с точки зрения множественного контраста, целостности и изменяющейся плотности.

Ключевые слова: Инь и Ян, философское выражение, китайская традиционная архитектура, китайская современная архитектура.

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INTRODUCTION (RESEARCH BACKGROUND AND SIGNIFICANCE, AND RESEARCH STATUS IN CHINA AND FOREIGN COUNTRIES)

The traditional philosophy of Yin and Yang can be considered as a basic understanding of the constitution of the universe. "Yin and Yang" constitute "Tao"¹, namely, "Yin" and "Yang" are the most basic compositions of the universe. According to the *Book of Changes*, it is believed that all things in the universe are the combination of Yin and Yang². Things that are composed of Yin or Yang by themselves cannot last long and will evolve to the other direction. Yin and Yang are both opposite and inseparable, promoting each other.

As one of the most basic and core contents of Chinese traditional philosophy, the philosophy of Yin and Yang has permeated all aspects of Chinese traditional culture, such as seal cutting, painting and calligraphy. Also, it exerts spiritual influence on Chinese traditional architecture, which has been run through thousands of years and is still visible in modern Chinese architecture.

1. a – sparse and dense contrast of seal cutting composition by QiBaishi.; b – well-proportioned density of seal cutting composition by DengShiru of Qing Dynasty. Photo: <http://image.baidu.com/>

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¹ *The Book of Changes. Cis. Guangzhou: Guangzhou Publishing House, 2001. P. 244.*

² *Chen Guying. Lao Tzu's Annotated Today. Chapter 42. Beijing: The Commercial Press, 2016. P. 233.*



1a



1b

THE PHILOSOPHY OF YIN AND YANG IN CHINESE TRADITIONAL ARCHITECTURE

In Chinese traditional architecture is deeply influenced by Chinese traditional philosophy. It consciously accepts the guidance of these traditional philosophy in the process of site selection, planning and construction. The architectural language always uses the opposite vocabulary, reflecting the relationship between “Yin” and “Yang”. The indoor and outdoor spaces of the building plane are separated from each other and accompanied alternately. In terms of architectural color, the main color of a large area and the complementary color of a small area come into being in parallel, the contraction and publicity of the architectural form, and the contrast between the virtual and real of the architectural facade... Are the specific expressions of “Yin” and “Yang”.

I. The Existence Between to Be or Not to Be

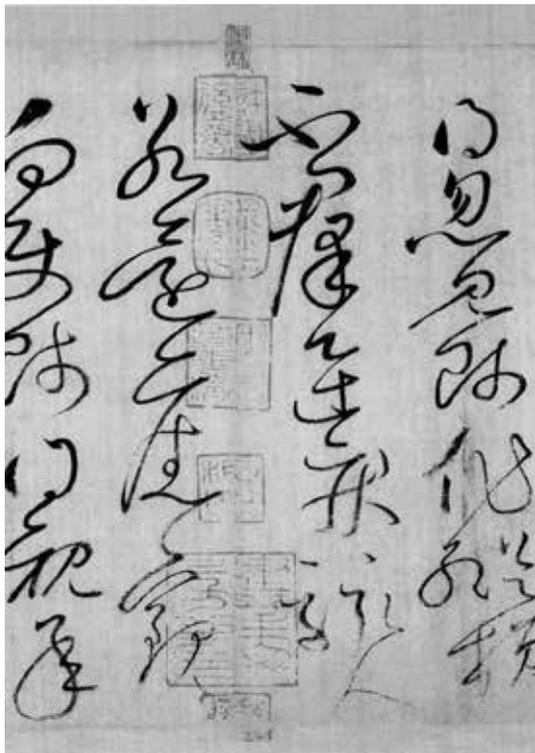
Chinese traditional architecture is down-to-earth, and is expanded by the duplication and composition of single building. It is a “plane art” similar to seal cutting, calligraphy and painting, expressing the aesthetic taste.

The opposing sides of seal cutting are as follows: red words and white background or red background and white words, which complement each other in Yin-Yang philosophy. In the Figure 1 *a, b* the sparse and dense contrast and well-proportioned density can be seen clearly. The performance of Yin and Yang in calligraphy is mainly the contrast between white background and ink text. Especially for the running script and cursive script, which are unrestrained, uneven in thickness, different in shade, the linked lines freely divide the white paper, limiting the “space” of different sizes and shapes. The half-dry stroke in calligraphy is more interesting. Among the thick strokes, there are natural white dots, and the effect of black and white contrast can be seen in Figure 2 *a, b*. In traditional paintings, the inks and the blanks complement each other, and a remote and profound sense of space is created on the plane (Fig. 3 *a, b*).

The Yin-Yang philosophy of Chinese traditional architectural layout is completely same, which can be also regarded as an enlarged version of seal cutting and calligraphy, but the creation medium is not stone or paper, but the earth. Instead of the contrast between the red and white of seal cutting, the contrast between black and white of calligraphy, and the contrast between ink and blank of painting, the two opposing sides of architecture are the physical buildings, walls, corridors and doors, and the courtyards enclosed by them.

The layout of square houses, royal palaces, imperial palaces (Fig. 4a) and even cities is almost same as that of a seal carving of even density. The

2a



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2. a — cursive script of Huai Su, a monk of the Tang Dynasty. Photo: Zhou Junjie. Manuscript of calligraphy aesthetics. Zhengzhou: Elephant Press, 2011. P. 96; b — a style of calligraphy characterized by hollow strokes, as if done with a half-dry brush. Photo: Zhou Junjie. Manuscript of calligraphy aesthetics. P. 116

3. a — Ma Yuan's painting of Song Dynasty. Photo: Han Qinghua, Qiu Keping. Complete works of famous Chinese paintings (2). Beijing: Guangming Daily Press, 2002. P. 12; b — the thick ink and blank in Li Keran's painting. Photo: <http://image.baidu.com/>

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2b



3a

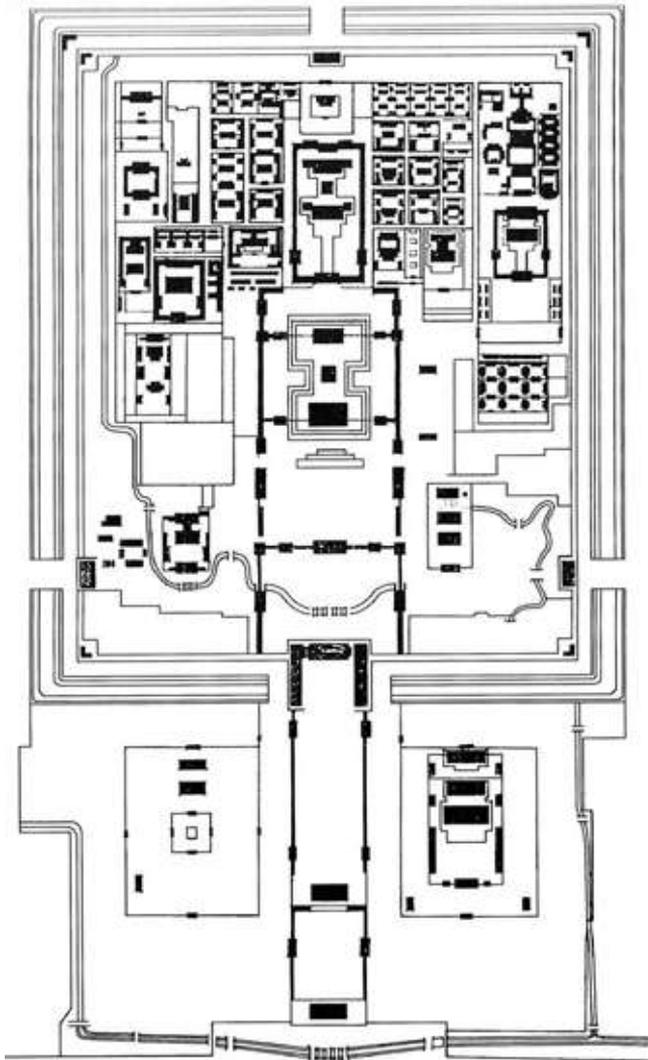
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3b

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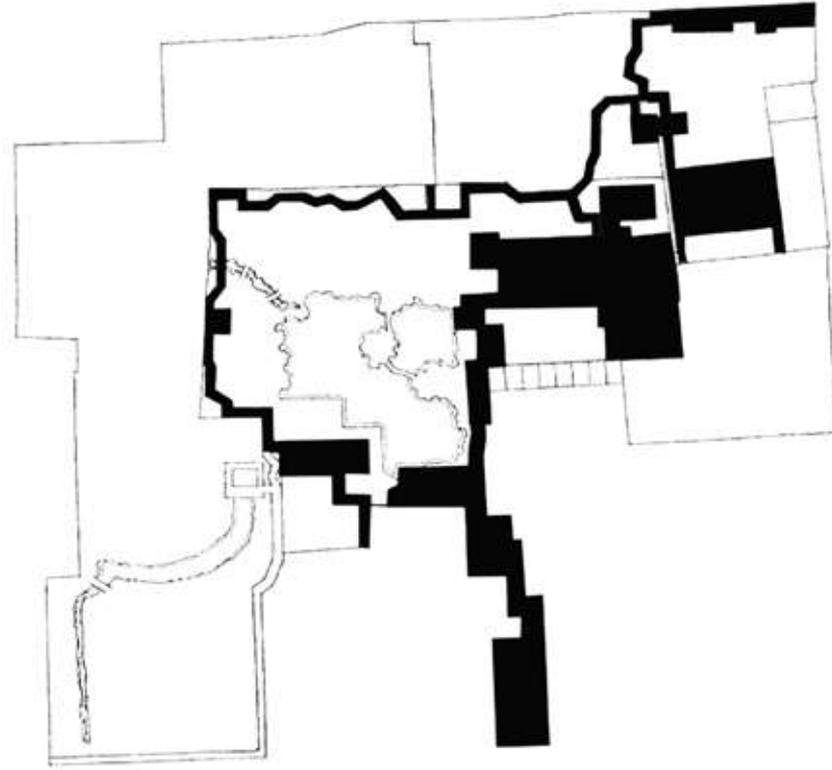
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4. a – Layout of the Imperial Palace. Photo: Hou Youbin. Chinese architectural aesthetics. Harbin: Heilongjiang Science and Technology Press, 1997. P. 156; b – Layout of garden. Photo: Hou Youbin. Chinese architectural aesthetics. P. 119

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³ Wang Bin. A rational interpretation of the diversity of space in Suzhou Master of the Nets Garden // *New Architecture*. 2011. No. 1. P. 148–151.

outer boundary outlined by walls is like the border of seals, and buildings, corridors and partitions divide the interior space, such as vermilion lines, while the atrium and side atrium of different sizes and shapes are like the white of the printed surface. The relationship between the “solid” of architecture and the “void” of courtyard is similar to the relationship between seal script and background color. Both are integral parts of architecture, sharing different functions. Without physical presence, there is no courtyard. Without the



courtyard, the building would be like a backwater, unable to become the “hub of heaven and earth” for the communication between man and nature.

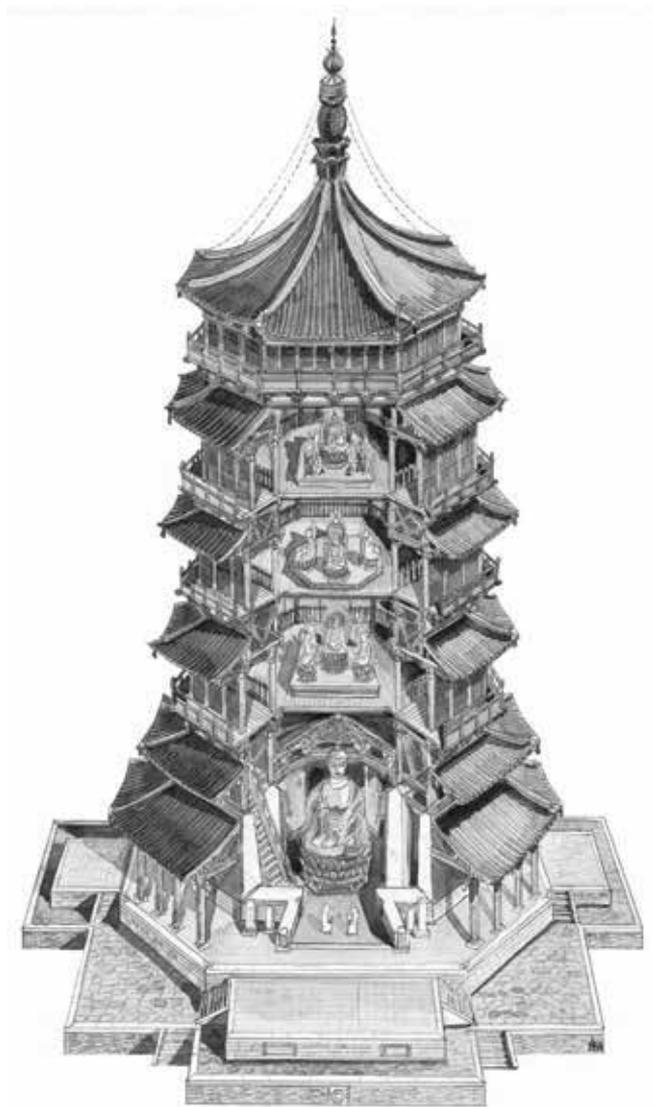
In addition, the private garden in south of the Yangtze River can be also taken as an example (Fig. 4b). The courtyard is densely built and even orderly, while the garden of the building is sparse, including walls, corridors, pavilions, small rooms, etc., which is similar to the blank in painting and seal cutting. The zigzag progress of the walls and corridors is just like a natural cursive line. Pavilions and small rooms dotted among them, like flying ink spots. The depth of field on both sides of the tour line always alternates and oscillates³, and the “real scene” and “virtual scene” are basically accompanied by each other, showing infinite interest.

II. The Orderly Forms

In Chinese traditional architecture, sloping roof is widely used. For double-eave, multi-eave hall or multi-eave tower, the building is composed of outward sloping roof and adducent house body. They are layered in composition,

alternating up and down and forming rhythm one by one (Fig. 5). Due to the large volume of the adducent house body, it dominates in the vertical proportion, thus determining the overall shape and main color of the building. At the same time, a deep projection is formed by the adduction of the house, which contrasts with the roof and makes the overall image of the building stand out. However, as the whole building is divided layer by layer, the huge volume is divided into

5. Wooden pagoda in Ying County.
Photo: Li Qianlang. *Through the wall – sectional view of Chinese classical ancient architecture*. Guilin: Guangxi Normal University Press, 2009. P. 219



nearly human scale, and the roof is suspended in the air against the projection, which reduces the overwhelming sense of heaviness.

This way of reinforcing its image through rhyme and contrast is very different from western traditional architecture. The pyramid has no horizontal layers, no projection of itself, but is integrated from top to bottom. Gothic architecture emphasizes high straight lines both inside and outside. Although the main facade is also rich in shadow, the exterior outline is complete. After the Renaissance, the more mature centralized composition uses the thick bottom to lift the plump and tall dome, and also highlights the architectural image with the sense of scale and heaviness. In other words, the western traditional architectural image tends to make use of the deterrent power generated by the huge scale, so that people can get psychological feelings from the comparison with the extraordinary scale of the building, while the Chinese traditional architecture is more inclined to rely on the “Yin-Yang philosophy” in the composition of the building itself.

THE JUXTAPOSITION OF VOID AND SOLID

The interface features of Chinese traditional architectural forms can be divided as follows: solid and hard interfaces with no windows or few windows, virtual interfaces with eaves and corridors, and soft interfaces with large areas of doors and windows. The single Chinese traditional building has the interface characteristic of “different presentation at different direction”, that is, the south facade is mostly virtual and soft, while the other three facades are mostly solid and hard. The same is true of the surrounding buildings. The outer facade is solid and hard, while the inner facade is generally virtual and soft. In this way, the overall characteristics of the building are mainly solid and hard, supplemented by the virtual and soft, that is, being conservative at outer interface, and being open at inner interface (Fig. 6). The solid and hard facade clearly limits the space, highlighting the importance of the virtual and soft facade, while the virtual and soft facade changes the rigidity of the building as a whole, making it rich in expression. There is no contradiction between the two.

THE PHILOSOPHY OF YIN AND YANG IN CHINESE MODERN ARCHITECTURE

Compared with traditional architecture, modern architecture completely belongs to a different “language”. Modern architects don’t use the traditional words to express the process of thinking in design, but use other vocabularies and semantics to express the artistic conception. This paper illustrates the expression of Yin-Yang philosophy in modern architecture by the works of Zhang Lei and Wang Shu.

I. Wholeness and Microvariation

In the work of Zhang Lei, the synonym for Yin-Yang speculation is “unity of opposites”⁴. The characteristics are as follows: in the stable, clear volume and uniform material texture, it pursues local changes, and interesting viewpoints will form, that is to say, “the role of Tao is subtle and weak”.

From a distance, Zhengzhou Exhibition Hall of East Urban Planning (hereinafter referred to as “ZEUPEN”) designed by Zhang Lei looks like a milky white, thin cube. The texture is derived from a layer of white glazed glass, which is 300 wide vertical bar. However, the angle of suspension is 0°, 45°, 90° respectively, in order to respond to the lighting and ventilation requirements of different parts, thereby causing local light changes in the whole. What’s more, the seemingly simple surface actually wraps complex contents, such as wide and open steps to guide the audience, open-air courtyards and closed exhibition halls. This is actually another “unity of opposites” (Fig. 7 a, b).

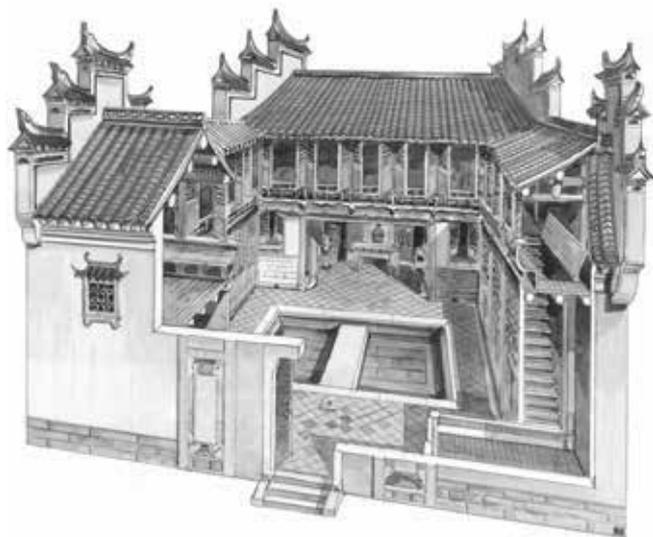
The Memorial Hall of the Jiangnan Headquarters of New Fourth Army in Li yang, Jiangsu Province

6. Traditional residence characterized by “different presentation at different facades”. Photo: Li Qianlang. *Through the wall — sectional view of Chinese classical ancient architecture*. Guilin: Guangxi Normal University Press, 2009. P. 323.

7. a — viewing at a distance of ZEUPEN. Photo: <http://www.ikuku.cn/user/4455> (Official website of Zhang Lei United architecture firm); b — the changes of glass strips on the façade of ZEUPEN. Photo: taken by author

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⁴ Zhang Lei. *Unity of Opposites-China International Architectural Art Practice Exhibition No. 4 Housing Design // Architecture Journal*. 2012. No. 11. P. 56–57; Zhou Qinghua, Zhang Lei. *Unity of Opposites-Interview with Professor Zhang Lei // Times Architecture*. 2013. No. 1. P. 68–71. 20 Koolhaas R. *Field Trip: (A) A Memoir Berlin Wall as Architecture // Koolhaas R., Mau B. SMLXL*. Rotterdam: 010 publishers, 1995. Pp. 212–232.





7a

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(hereinafter referred to as “N4A Memorial Hall”), is another work designed by Zhang Lei, which most typically pursues changes in the whole.

The N4A Memorial was originally a horizontal volume covered in dark grey granite, being quiet and bland. However, the interior space is surprisingly rich, just like a porous Swiss cheese⁵. The irregular open-air courtyard is covered with red metal plates, symbolizing the blood spilled on the rock during the revolutionary war⁶. The twisted red metal plates contrast with the sculptural appearance, which is full of tension of life. What is viewed inside is the irregular arrangement of holes “accidentally” generated on the four facades, which release the richness and power of the interior of the building (Fig. 8 a, b).

The holes of N4A Memorial are just like the slender waterfalls and layers of clouds set aside on the mountains in traditional paintings with thick ink. Although it is light and even blank, it is better than using thick ink, causing the imagination and creating a vivid atmosphere and a secluded artistic conception in the picture. As the saying goes, “Tao can be regarded as the light in the heart and something that appear

8. a — facade of N4A; b — part of N4A. Photo: Zhou Qinghua, Zhang Lei. *Unity of Opposites-Interview with Professor Zhang Lei // Times Architecture*. 2013. No. 1. P. 69

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⁵ Edward Kugel (German); translated by Sun Lingbo. *From simple to complex: Zhang Lei's design // World Architecture*. 2011. No. 4. P. 19.

⁶ Hu Heng. *History is Pleasure — The Memorial Hall of the New Fourth Army Jiangnan Command in Liyang, Jiangsu designed by Zhang Lei // Time Architecture*. 2008. No. 3. P. 85.

⁷ Chen Guying. *Lao Tzu's Annotated Today. Chapter 21. Beijing: The Commercial Press, 2016. P. 156.*

⁸ Wang Shu, Lu Wenyu. *The Poetic One of Recycling — Creating a World Similar to Nature // Time Architecture*. 2012. No. 2. P. 68.





suddenly. There is truth between the light and something that appears suddenly in the heart, and there are rule of the light and something that appear suddenly in the heart”⁷.

II. The Density

Xiang shan Campus designed by Wang Shu is another example worth notice. In terms of overall layout, this campus is almost a reinterpretation of Hangzhou’s traditional pattern, showing the appearance of “lakes and mountains occupying half city”⁸. In fact, the campus has made the maximum degree of modest concession to nature, which can be said that “lakes and mountains occupy seven tenth of a city”, so that the general plan takes on the artistic conception of traditional gardens and calligraphy and painting. The architecture twists around the mountain, and automatically gives way to the strip-shaped north side of the mountain area. Area and the crescent-shaped south side of the mountain area. The compression of the land increases the density of the building, while the green mountain becomes the center of the campus. The density contrast in the campus, coupled with the elegant colors of black, white and gray, is just like the contrast between the dense architectural complexes in the south of the Yangtze River and the vast scattered gardens, and just like that of the traditional paintings, where the dense inks are campus buildings and the blank area is the nature. The zigzag swing of

9a



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9. a — the layout density and the building sway. Photo: <http://guihuayun.com/maps/index.php>; b — the density of windows on the wall. Photo: taken by author; c — the swing of the building shape on Xiangshan Campus. Photo: taken by author

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⁹ Wang Shu, Lu Wenyu. The second phase of Shannan project design for Xiangshan Campus of China Academy of Art // *Times Architecture*. 2008. No. 3. P. 73.

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9b

the building is more like the smooth cursive lines⁹, which connect and echo with each other, dividing the “blank” of various forms — the courtyards. The patios are like the occasional “blanks” in thick ink, enriching the spatial level and increasing the spatial interest (Fig. 9a).

If the contrast pattern on the general plan of Xiang shan campus is limited by the natural environment, and the formation of the density contrast is accidental, the contrast in the architectural modeling is completely unintentional expression of the architect’s aesthetic taste. In Zhang Lei’s works, the building block is pure and regular geometry, just like “regular script” or “official script”, while the buildings of Xiang shan Campus have shown the feeling of “cursive script” or “running script”, and the building volume is always in the movement of twists and turns.

Architectural contrast also occurs between different facades, which seem to inherit the physical characteristics of “showing different facades” of traditional buildings. There is fewer or no window on some facades, being “hard and solid”. And there are many windows on some facades, or large horizontal eaves, being “soft and void”. In particular, the experimental center in shannan area has a large number of solid walls on the back facade, but there are irregular narrow windows, which are irregular in horizontal and vertical directions and disperse in disordered form, just like the tiny but vivid “half-dry stroke” occasionally generated under large thick ink (Fig. 9b).



CONCLUSION

ПРИМЕЧАНИЯ

The deepest philosophical thought performed by architecture is hidden under the material shell of architecture, and is also the most difficult to be “interpreted” by readers, but it determines the appearance of architecture. The philosophy of Yin and Yang is one of the core contents of Chinese traditional architecture, and is a basic understanding of the composition of the world. It influences Chinese traditional architecture and modern architecture in a subtle way, and is “translated” stealthily in multiple architectural languages.

As a whole, the common characteristics of these buildings are as follows.

¹⁰ Chen Guying. *Lao Tzu's Annotated Today*. Chapter 40. Beijing: The Commercial Press, 2016. P. 226.

I. Contingency

The contingency refers to the change and interest brought by the “Yin” in the contrast between Yin and Yang. The essence of traditional architectural art is to seek “Yin” from “Yang”, and the specific expressions are to seek “nihility” from reality, seek twists and turns from straight lines, seek changes from rules, seek incompleteness from the whole, and seek couples from homogeneity. Without these changes in contrast, architecture would be dull. Just as painting and calligraphy seek the beauty of the blank in thick ink, seal cutting seek the red-white contrast in balance, painting, calligraphy and seal cutting will lose its charm and flexibility without the “blank”, being unable to form a secluded artistic conception and strange interest.

“The cyclic movement changes are the movement of the Tao, and the role of the Tao is subtle and weak”¹⁰. In short, the “Yin” is the focus of people’s appreciation and attention. Of course, the “Yin” is generated naturally but not deliberately, which is of unexpected contingency.

II. Wholeness

The final state of Yin-Yang contrast is to “complement each other”, which is a sense of wholeness and

harmony, rather than chaos. In the production of the sense of wholeness, the relatively dominant one of the opposing parties often plays a decisive role in the control of the overall effect. Whether it is a single building or a group of buildings, the traditional roof has the largest proportion and color area, dominating the formation of the overall sense and overall impression.

Although “the role of Tao is subtle and weak”, “Yin” must be set against the background of the whole of “Yang”, and the change must be part of the whole. Contingency and interest are only part of the whole of traditional architecture. Yin and Yang are opposing sides, mutually complementary and dependent. And the integration of the two is the essence of architecture.

III. Timeliness

This is also the result of Yin and Yang opposing each other. In a square architectural complex, the space with a roof can be regarded as “Yang”, and the space without a roof can be regarded as “Yin”, which are just like thick ink and blank in paintings. These two kinds of spaces appear alternately, and the light changes with them. In a scattered garden, the fence limiting the sight, rockery and other physical interface and “window”, “door”, corridor and other transparent interface are set in the zigzagging line alternately, the scenery on both sides will be present in front of the viewer rhythmically. This “existence between to be or not to be” is just like the contrast between Yin and Yang in traditional painting, creating a sense of remote space. And people need a certain amount of time to enjoy, and feel the artistic conception and charm in the process. Chinese architecture performs invisible time with visible, tactile and perceptible physical entities.

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