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**THE GARDENS' EYES:
AN ALTERNATIVE VISUAL GUIDANCE SYSTEM**

ALEXANDRA YUCHEN XIE

2018

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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ABSTRACT

THE GARDENS' EYES: AN ALTERNATIVE VISUAL GUIDANCE SYSTEM

The ancient gardens of Suzhou in the Jiangnan region of China are mysterious and time-honored. Many visitors to these ancient gardens, in particular overseas visitors, want to understand and explore them more deeply. They also want to view them in a simple way (Song, 2015). This thesis project aims to enable this through an informed symbolic visual guidance system. The system is both material and symbolic. The visual guidance system design integrates the culturally symbolic and spatial meaning of the leak windows of four famous Suzhou classical gardens as well as the visual effect, aesthetic, functional value of those leak windows.

In the thesis project, I investigate how the essence of four of the classical Suzhou gardens can be communicated through symbolic graphic design, materiality and spatial installation. In it, I aim to convey the history and cultural values contained in these different period gardens by combining visual effects, aesthetic and functional values. This design exploration takes the form of a unique artwork composed of patterns, symbols and shapes that combine to convey each garden's historical value and cultural heritage through modern expression. The symbolic shapes, material form, and images specific to each garden are then synthesized into a visual guidance system at the center of which is the leak window.

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INTRODUCTION

INTRODUCTION

Lin Chonghua and Liu Wei (2017) assert that:

The window is not only a semi-virtual and semi-real element, but also a rich spatial object of the layering, and can also play a transitional role. The garden is built by the user's needs, so the height of the windows of the garden is the same as the line of sight of the human eye. The window can make people see the looming scenery outside the window, giving people a visual effect that is difficult to distinguish. (p. 334)

The leak window element in the Suzhou classical garden conveys a certain cultural connotation. The three cultural theories of Confucianism, Taoism and Buddhism three constitutes the foundation of its aesthetic value. Firstly, the Confucian culture is reflected by the symmetry and orderliness of auspicious patterns. Secondly, Taoism culture is reflected by the pursuit of freedom. The pattern of dark eight immortals, five blessings, the peach pattern and other manifestations is symbolic of people's pursuit and yearning for a long life. The third, that of Buddhism, is reflected in the traditional decoration, lotus flowers and 卐(Wan) that are commonly used in Buddhism culture.

INTRODUCTION

The leak windows are a unique feature of the classical Suzhou gardens in the Jiangnan region of China. Moreover, they importantly reflect the garden culture of the Suzhou literati. Beginning with the Song dynasty (960-1279), the Suzhou gardens began to incorporate leak windows. The skills employed in making the leak windows became more sophisticated during the Yuan (1279–1368), Ming (1368–1644) and Qing (1644-1912) dynasties. Each dynasty developed its own unique cultural style in making the leak windows. In each garden, the leak windows demonstrate a particular development in the function and meaning of the leak window, as well as visual effect, aesthetic and functional value. Hence, as each garden is a good example of a particular time period I chose the gardens and leak windows that were most representative of the visual effect, aesthetics and functional value of the four dynasties. These gardens are the Canglang Pavilion, the Lion Grove Garden, the Humble Administrator's Garden and the Lingering Garden.



FIGURE 1: THE CANGLANG PAVILION. PHOTOGRAPH
YUCHEN XIE, 2018.

The Canglang Pavilion (see figure 1) is the oldest classical garden in Suzhou. It was built by Su Zimei, a scholar of the Song dynasty (960-1279), and has been rebuilt many times. The garden is also famous for its buildings featuring unique leak windows. Chinese artists consider the leak windows of this garden to have extremely high artistic value due to their different impressive designs visual effect, aesthetic and functional value (Li et al, 2015).

INTRODUCTION

The Lion Grove Garden (see figure 2), built circa 1342 during the Yuan dynasty (1279-1368), is one of the most interesting gardens in Suzhou. The garden was built by a senior Buddhist monk and so reflects a Buddhist mood (Zheng, 2011). According to Zheng (2011), the garden landscape simulates the human body, the shape of the lion and the image of the beast all of which are related to Buddhist stories, while its aesthetics and architectural features reflect the Buddhist mood. The Lion Grove Garden has many of the key features of Suzhou's classical gardens, such as pavilions, pagodas, courtyards and buildings with various kinds of leak windows. The design of the garden has attracted many famous visitors over its long history, including the painter Ni Zan of the Yuan dynasty and Qianlong emperors in the Qing dynasty. In 2000, the Lion Grove Garden was listed as a World Heritage site by UNESCO (Xu, 2015).



FIGURE 2: THE LION GROVE GARDEN. PHOTOGRAPH YUCHEN XIE, 2018.

INTRODUCTION



FIGURE 3: THE HUMBLE ADMINISTRATOR'S GARDEN. PHOTOGRAPH YUCHEN XIE, 2018.

The Humble Administrator's Garden (see figure 3) is the best-preserved and the largest classical garden in Suzhou. It was built in 1513 by imperial envoy, Wang Xian Cheng, who was also a poet of the Ming dynasty (1368–1644). The garden was named after a poet Pan Yue, which expressed Wang's desire to retire from his role as imperial envoy. The Humble Administrator's Garden contains many pavilions and bridges that are located above and among the garden's interconnected pools and islands, much like a traditional Chinese scroll painting (Xu, 2015). The garden is a quintessential example of Chinese landscape garden design, striving for harmony among four essential elements: rocks, water, plants, and pavilions. Moreover, the garden embodies the Southern School style of gardening which places emphasis on tranquility and sophistication (Jia, 2011).

INTRODUCTION

The Linger Garden (see figure 4) was listed as a cultural relic of national importance in 1961. It was built in 1593 in the Ming dynasty, but was renovated extensively in the Qing dynasty. In 1873 the garden, originally known as “ Cold Azure Mountain Village “, was renamed the Linger Garden when Sheng Kang, a retired Qing Dynasty official bought it (Zhong, 1983). While the central area of the garden features primary elements of Chinese traditional garden (such as a lake and a miniature mountain), the eastern area mainly features building and leak windows. In this area there is a long corridor with leak windows that connects two sections, the central area and the eastern area, so that the landscape can be seen behind the leak windows which have better visual effect than directly viewing from either the central area or the eastern area (Xu, 2015).



FIGURE 4: THE LINGERING GARDEN. PHOTOGRAPH YUCHEN XIE, 2018.

INTRODUCTION

Each case study garden has a different leak window, which is discussed in the following sections. I propose using these different windows as the basis for an alternative visual guidance system, which will replace the two-dimensional and graphic visual guidance system currently used to guide visitors, and as shown below.



FIGURE 5: EXAMPLE OF THE SUZHOU GARDENS' TRADITIONAL VISUAL GUIDANCE SYSTEM. (2016). RETRIEVED FROM [HTTP://WWW.HUITU.COM/DESIGN/SHOW/20161215/152204969020.HTML](http://www.huitu.com/design/show/20161215/152204969020.html)

The phrase visual guidance system, “视觉导视系统” in Chinese, comes from the English word ‘sign’, which has various meanings such as signals, signs, instructions, and indications. The visual guidance system operates as a recognition symbol. It pays attention to the human psychological and physiological feelings and the overall construction of the designed object. In a word, the visual guidance system incorporates all these aspects. In some cases, it is embodied in the individual shape of the symbols. As shown in figure 5, only a few of the garden features are shown in the visual guidance system. Visual guidance systems are now widely used in modern commercial spaces, public facilities, urban transportation, as well as community and other public spaces. Moreover, the visual guidance system is no longer an isolated single design or a simple sign, but an integrated design of brand images, architectural landscapes, traffic nodes, information functions and even the media interface.

INTRODUCTION

In this thesis project, the visual guidance system is an information interface system that combines the relationship between an environment and a person's interaction with that environment. This visual guidance system therefore integrates the most famous sights and scenery of the case study gardens as well as the cultural symbolism of those gardens. The alternative system takes the form of small leak window model that allows views of the garden from different angles. These views are photographs that aim to attract as well as introduce visitors to the garden to the sights inside the garden. The following figure shows an early model of the new visual guidance system.



FIGURE 6: THE LEAK WINDOW PROTOTYPE COMBINING CULTURAL SYMBOLISM AND GARDEN VIEW. PHOTOGRAPH YUCHEN XIE, 2018.

As a part of culture, a visual guidance system not only functions as a tool to guide, explain, and instruct, it also helps to shape culture and create style.

In this thesis project I seek to explore creating an alternative visual guidance system for four of the Suzhou gardens. I propose the system for first-time visitors to these famous gardens, especially Western tourists unfamiliar with the unique features of these gardens, as well as with traditional Chinese garden heritage and culture. I seek to do this by exploring the following questions.

RESEARCH QUESTIONS

RESEARCH QUESTIONS

- 1) What are the key features of the leak windows of the four chosen gardens and how might they be reworked into a visual guidance system?
- 2) What is the connection between the leak windows and the gardens?
- 3) Is it feasible to develop a visual guidance system that integrates the elements of the leak windows?

METHODOLOGY

METHODOLOGY

The research methods employed in this thesis project are literature review, case study analysis, and design making, and are briefly outlined below.

LITERATURE REVIEW

Literature review is an objective analysis of relevant scholarly research on the topic and other types of literature, such as secondary research. The method is used to gather information about the topic being studied from various sources and, generally, contains a clear search and selection strategy. The findings from this method are concisely summarized and offered as a rationale for conducting the research. By using this method, I can thus construct a conceptual framework that underpins the purpose of the research (Cronin et al., 2018). In this thesis project, the subsection literature review presents the theory of Semiotics. In this subsection, I discuss the semiotic meaning of the geometric patterns of the leak windows in the four Chinese gardens and the layout of patterns, which lays the theoretical foundation for my prototype designs and design-making.

METHODOLOGY

CASE STUDY ANALYSIS

Case study analysis is one of the most widely used research methods. It is an empirical inquiry investigating the case that relates to the research topic. Case study analysis is increasingly used to investigate and understand complex subjects, such as the design of leak windows and the history of garden landscaping. This method of analysis has undergone substantial development. It differs from experiential studies in that it is employed to examine a research topic in a real-world setting. The cases are chosen based on the purpose of research (Yin, 2002; Harrison et al, 2017). This research project focuses on the leak windows of the Canglang Pavilion, the Lion Grove Garden, the Humble Administrator's Garden and the Lingering Garden, gardens that are significant to China's tourism and heritage.

In terms of today's tourism and landscape industry, the Suzhou gardens are one of the most famous cultural heritage sites in the world. However, many tourists, especially Western tourists visiting the garden for the first time, will encounter the wrong way in the process of visiting the Suzhou gardens. Visitors, on arriving at this tourist attraction, can't quickly reach the garden they want to go to or can't understand the meaning of the garden landscape due to the lack of an effective visual guidance system.

Northwest A&F University of China lecturers Zhang Ruichao and Zhang Yiding argue that "The visual guidance system is an indispensable part of the landscape. It can create a comfortable environment for people to explore the garden and truly reflect the landscape. Its people-oriented design concept is to enhance the influence and affinity of the landscape." (Zhang, 2015, p.281). This is the concept behind my Gardens' Eyes design project.

Using my visitor experience of the case study gardens, and this theory, I set about creating a system that would show the essence of the selected garden landscapes, that would function as an alternative to the traditional visual guidance system, and which would serve as a work of art. My system would incorporate the window styles of the four case study gardens, as well as the design styles and symbolism of the four dynasties Song, Yuan, Ming and Qing.

LITERATURE REVIEW

SEMIOTICS

Semiotics is widely accepted as a study of the general science of signs and symbols. It was proposed by Charles Sanders Peirce (1860) and Ferdinand de Saussure (1974). "Saussure defined the sign, as we have seen, as the relationship between a signifier (that which carries or produces meaning) and the signified (the meaning itself). His primary insight was that the relationship between them is arbitrary; within language the signifier 'red', for example, is not in itself red and, further, different languages of course have different words for the same thing" (Curtin, 2007, p.53). Saussure considered the sign itself consists of two parts, the signifier and the signified. The signifier is the carrier of meaning. The signified is the concept or meaning. The bond between them is arbitrary not necessarily connected. Different languages use different words for the signifier, such as within language the signifier 'red' is not in itself red. The signifier "red" is questionable because is not itself "red".

Curtain argues further that:

semiotics is concerned with the nature and function of language (be it the relatively ambiguous status of visual language) and the processes by which meaning is generated and understood. Semiotic analysis acknowledges the position, or role, of the individual in terms of a challenge to any notion of fixed or unitary or universal meaning and therefore subjectivity can be engaged dynamically with the image or object. (p.61)

LITERATURE REVIEW

Semiotics is concerned with the meaning and understanding of signs within uncertain status of visual language. Semiotic analysis can be subjective expression of individual consciousness with the idea of an image or object. The immediate visual impact of denoted meaning, and the cultural meaning we attach to it, or, connoted meaning. Semiotics could provide a radical and useful means to consider the relation of the form and subject of design to what it means to represent. The authors consider the semiotic theory analysis of artworks. They discuss the signifier, signified and symbolism, and reflect on key attributes that the sign is an effective method of expressing thoughts, feelings and information. In regard this thesis project visual guidance system design, I find aspects of semiotic theory important in considering the symbolic meaning of the four case-study gardens. As a designer I have to grasp the characteristics of the visual guidance system symbols for different gardens in order to create a successful alternative visual guidance system. During the process of designing this new system, I need to consider the geographical, cultural and ethnic symbols so as to create an effective system that emphasizes the symbolic and cultural value of the leak window.

Semiotics can be applied to the study all cultural products. The theory shares many similar concepts with communication, such as symbol, meaning, verbal and non-verbal code. The semiotics approach can be applied with an assumption that any cultural phenomenon is a sign phenomenon (Yakin & Totu, 2014). This assertion is important to the thesis project, especially in regard the symbols selected in the conceptual development and design prototyping. The graphic design symbol refers to a symbol that can be used to express certain properties of things. In designing visual guidance systems, it is commonly understood that symbols must be functional and easily understood. On the other hand, design can serve to reflect an individual's psychological need, and symbols make visitors have the similar association with the designers. In the following section, I discuss the relevance of symbols and signs from a Chinese perspective.

LITERATURE REVIEW

In the design history of China, graphic design symbols include traditional auspicious patterns and logo symbols. As early as the Spring and Autumn Period of China (approximately 771 – 476 BC), people had developed graphic design symbols. For five thousand years, China's traditional graphics have carried the wisdom and essence of the Chinese nations and their ancestors. The cultural concepts of virtue, nature and harmony between man and nature are manifested in spiritual symbols in a harmonious, modest and simple form. Chinese traditional graphics incorporate natural phenomena wind, fire, water, clouds, and lightning as auspicious patterns (Figure 7). Through long cultural usage and association, these objects have become auspicious patterns. These patterns include the traditional Chinese auspicious symbols the Taoist Fushou word, cloud pattern, the beast, the Eight Immortals (see figure 8); the lotus and the eight treasures from Buddhism and Lamaism; and the symbol of good fortune, the annual fish, and the five sons. And, because Chinese traditional graphics place emphasis on metaphysical thinking each abstract symbol is loaded with philosophical meaning. In modern Chinese graphic design, the auspicious patterns have become more and more abundant, and the design language has become more diverse. Additional to the auspicious symbols mentioned above have been added four plants, namely, plum, orchid, bamboo and chrysanthemum that have been loved for thousands of years (Figure 9). It is because of their elegant quality that these symbols have become a cultural symbol of personality for Chinese designers.

LITERATURE REVIEW



FIGURE 7: ARE YOU FIRE, EARTH, ICE OR WATER? (2018). [AUSPICIOUS CLOUD PATTERN DESIGNS]. RETRIEVED FROM [HTTP://WWW.PLAYBUZZ.COM/AMBERJ39/ARE-YOU-FIRE-EARTH-ICE-OR-WATER](http://www.playbuzz.com/amberj39/are-you-fire-earth-ice-or-water)



FIGURE 8: BAGUA [AUSPICIOUS EIGHT IMMORTALS PATTERN DESIGN]. (2016). RETRIEVED FROM [HTTPS://WWW.NATIONSONLINE.ORG/ONEWORLD/CHINESE_CUSTOMS/BAGUA.HTM](https://www.nationsonline.org/oneworld/chinese_customs/bagua.htm)



FIGURE 9: PLUM, ORCHID, BAMBOO AND CHRYSANTHEMUM [AUSPICIOUS PLUM, ORCHID, BAMBOO AND CHRYSANTHEMUM DESIGNS]. (2017). RETRIEVED FROM [HTTPS://U.SANWEN.NET/SUBJECT/QPMFIQQF.HTML](https://u.sanwen.net/subject/qpmfiqqf.html)

LITERATURE REVIEW

In the following section, I discuss how auspicious patterns have become conveyors of meaning in my leak window designs.

THE LANDSCAPE DESIGN SYMBOL

Ken Taylor (2009) argues that the landscape is the carrier of culture and the testimony of history. People not only need to create meaning in the landscape, they also need to pursue the meaning of the landscape. The landscape reflects the spiritual needs of a people to varying degrees: (1) through the form of beauty, such as image, spatial layout, proportion, scale, color, rhythm and texture; (2) and through performance connotation, that is, social ethics and spiritual symbol. Landscape design symbols are divided into deconstructive minimalist symbols, postmodernist symbols, and garden art symbols. Any symbology has its associated domain, environment or context. The landscape symbol system is not only a form, but also a style and thought. It is a social and cultural expression system based on the landscape value system. The language symbols of the landscape are various elements contained and arranged within the boundaries of the landscape, such as water bodies, landscape pieces, and plants. These elements are expressive of a certain meaning. Each landscape design has a unique symbol system that may contain such features as sculpture, lawns, signs and paths. All these elements need to be represented by landscape design symbol.

For example, the dry landscape of the Japanese courtyard is subtle and fascinating. In this landscape example (see figure 10), the gardener uses stones to express the language symbols of the landscape. Stones are one landscape design symbol, as are the shrubs and grasses that are expressive of Japanese traditional garden.

Sculptures are also a landscape design symbol. In the design of the Korean War Memorial (see figure 11), memories of this war are conveyed through the suppressed atmosphere, the narrowness of the memorial garden space, and the expression of the sculpted figures.

LITERATURE REVIEW



FIGURE 10: JAPANESE TRADITIONAL GARDEN [JAPANESE GARDEN PRODUCTION IN BEIJING NO. 5 MANSION]. (2017). RETRIEVED FROM [HTTP://WWW.DSHGYL.COM/RSTYJG/149.HTML](http://www.dshgyl.com/rstyjg/149.html)



FIGURE 11: HANG DINH. (1992). [HTTPS://WWW.123RF.COM/PHOTO_19921217_BRONZE-SOLDIERS-ON-PATROL-AT-KOREAN-WAR-MEMORIAL-WASHINGTON-MALL-WASHINGTON-DC.HTML](https://www.123rf.com/photo_19921217_bronze-soldiers-on-patrol-at-korean-war-memorial-washington-mall-washington-dc.html) [STOCK PHOTO - BRONZE SOLDIERS ON PATROL AT KOREAN WAR MEMORIAL, WASHINGTON MALL, WASHINGTON DC].

LITERATURE REVIEW

Landscape is a combination of technology and art and, also, the unity of materiality and spirituality. Landscape design should therefore create some kind of environmental effects, reflect different social cultures, and then express some kind of human emotions. In China, classical garden design integrates landscape design with architecture, mountain forms, ponds, planting, painting, sculpture, and poetry. With landscape design, the Suzhou gardens have become one of the most successful examples of Chinese garden art. Suzhou classical gardens express the idea of “harmony of all things” and “harmony between man and nature”. (Chinaculture.org, 2017). There are many symbolic symbols in this classical garden design.

Ouyang (2013) argues that the concept of semiotics provides a new way to explore the spatial artistic conception of the Suzhou gardens. Using this concept, or elements of semiotics, such as line and pattern, modern designers can examine and explore the beauty of the spatial artistic conception of the Suzhou gardens from the new perspective. Ouyang (2013) applied the theory of semiotics to unpacking the spatial artistic conception of these gardens, analyzing their cultural connotation from their time imagery symbols and space imagery symbols. Eventually, she introduced both art and semiotic concepts, principles and methods into the study of the spatial artistic conception of Suzhou gardens, thus providing a new perspective to embody the Suzhou garden to both the East or West.

LITERATURE REVIEW

GEOMETRIC PATTERNS

Chinese classical gardens use various techniques and elements of landscape construction, such as doors, windows and holes. The leak windows are an important feature of the Suzhou gardens and the gardens' key buildings. Positioned either on one side of the corridor, of a garden building, or at the corner, they offer garden visitors different views and feelings. In appearance, they take the form of a hollowed window, decorated with a variety of auspicious patterns, which opens on to the garden scene. The leak windows feature many geometric patterns, mainly composed of lines, arcs and circles. The geometric patterns composed of lines include the swastika, the hexagon, rhombus flowers, scroll bars and lace rings. The geometric patterns arranged in the shape of an arc include the fish scale, the money grain, the ball grain, the autumn leaf, as well as the begonia, and sunflower. The window frame of the leak window can take the shape of the triangle, square, long square, hexagon, octagonal, circle and fan (Zeng, 2017)

In addition, Le (2016) writes that in Suzhou classical gardens the geometric pattern of the leak windows is changeable and composed of many patterns. About 23 types of patterns were identified in the 135 leak windows studied. These Le grouped into five categories, namely, geometric, abstract, combinatorial, literal and figurative (see figure 12). Geometric patterns consist of simple geometric shapes, such as circles, octagon, squares and hexagons and so on. They are primarily used as the main pattern of the leak windows, or as the border for other patterns. By contrast, the abstract pattern is formed from something abstracted. Of these patterns, the shape of the flower is used most frequently. There are patterns of begonias, patterns of four petals, and leaf patterns. Other abstract patterns include the Lingzhi fungus motif and double axe patterns. In most cases they serve as the main pattern of a leak window, sometimes as the border of other patterns. The combinatorial pattern is composed of lines or curves. These patterns feature turning-shaped lines, curved lines and straight lines, as well as literal patterns representing some auspicious ancient Chinese characters. Common amongst these are the words longevity(寿shou) and swastika (卍 wan). Combinatorial patterns usually appear at the center of a leak windows. By contrast figurative patterns are thematic and generally represent scenes central to the legendary novels, dramas and stories of Buddha and Taoism (Le,2016).

LITERATURE REVIEW












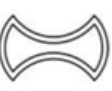




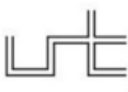



Geometric patterns	 circles	 octagon	 hexagons	 squares	 rounded rectangular	 rhombus
Abstract patterns	 begonias	 petals	 leaves	 plum blossom		
	 Lingzhi fungus	 double axe	 fan-shaped	 cloud		
Combinatorial patterns	 turning-shaped lines	 curved lines	 straight lines	 H-shaped Bar		
Literal patterns	 swastika			Figurative patterns	 figurative patterns	

FIGURE 12: LEAK WINDOW GEOMETRIC PATTERNS. AI DESIGN, YUCHEN XIE, 2018.

LITERATURE REVIEW

CATEGORIES OF GEOMETRIC PATTERN AND LAYOUT

The layout of the geometric patterns of the Suzhou case study gardens is varied. In this variation, there are seven layout forms, namely, central, vertical three-column, horizontal three-line, grids, double crossed shape, multi-points, frame shape, and bilateral symmetry (see figure 13 No1-5).

The central layout is the most commonly appearing in these classical gardens. This layout is widely used because of the concept of center in Chinese culture, which symbolizes convergence and a state of completeness and stability (Le, 2016). In this layout, the main pattern is located at the center, the area that the visitor's attention is usually focused on. Thus, the theme of this type of leak window is very clear and easy to read.

The vertical three-column layout describes a pattern in which the component parts maybe divided according to symbolic meaning. Consequently, the pattern in the middle area may be more important, and the symmetry patterns on both sides - less so. The horizontal three-line layout is similar to the vertical layout, but the patterns are arranged horizontally (Le, 2016).

In addition, a grid layout is also widely used in the Suzhou garden buildings. In this layout there is no center, but an emphasis on regularity. The nine-grid layout is the most common in the Suzhou gardens – possibly because the number nine is auspicious in Chinese culture (Le, 2016). Further to this commonly appearing layout is the double-crossed-shape-layout, which has a central body pattern with other patterns radiating from the center to the periphery in eight directions (Le, 2016).

LITERATURE REVIEW



FIGURE 13 NO1: CENTRAL LAYOUT LEAK WINDOW DESIGN (FROM CANGLANG PAVILION). YUCHEN XIE, 2018.



FIGURE 13 NO 2: GRID LAYOUT LEAK WINDOW DESIGN (FROM THE LINGERING GARDEN), YUCHEN XIE, 2018.

LITERATURE REVIEW

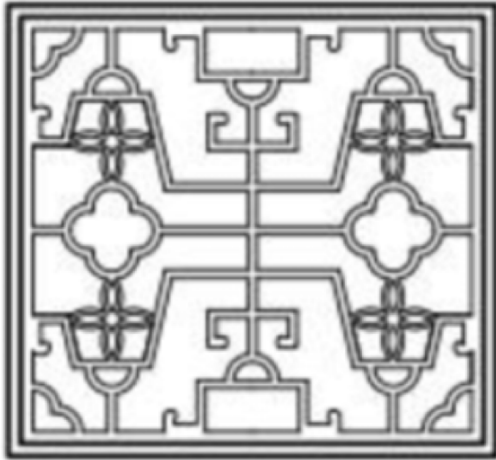


FIGURE 13 NO 3: VERTICAL THREE-COLUMN LAYOUT LEAK WINDOW DESIGN (FROM CANGLANG PAVILION), YUCHEN XIE, 2018.

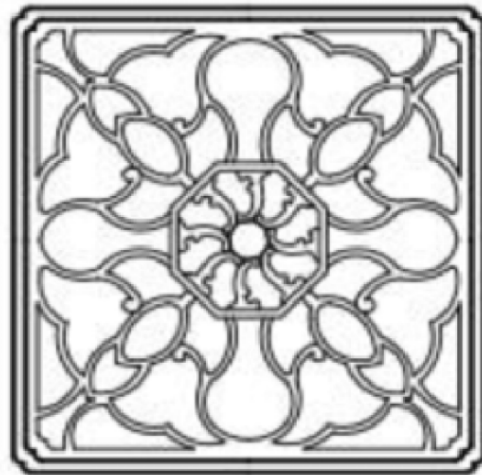


FIGURE 13 NO 4: DOUBLE CROSSED SHAPE LAYOUT LEAK WINDOW DESIGN (FROM THE LION GROVE GARDEN), YUCHEN XIE, 2018

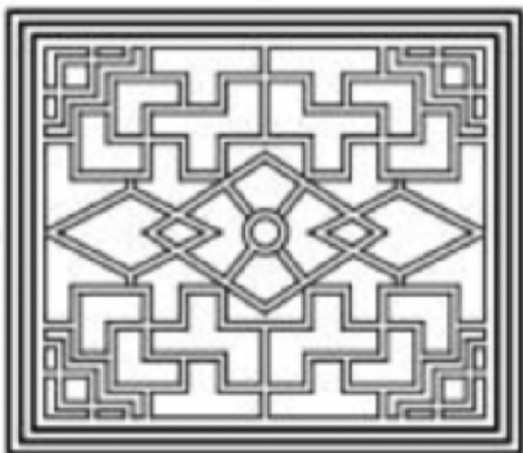


FIGURE 13 NO 5: HORIZONTAL THREE-COLUMN LAYOUT LEAK WINDOW DESIGN (FROM CANGLANG PAVILION GARDEN, YUCHEN XIE, 2018.

CASE STUDY ANALYSIS

CASE STUDY OF PATTERNS AND THEIR LAYOUT IN THE LEAK WINDOWS

The Canglang Pavilion

The Canglang Pavilion has a set of differently-sized leak windows in which are composed abstract patterns of lotus, pomegranate, and plum (see figures 14~20), and which skillfully present to the garden visitor seasonal symbols of Spring, Summer, Autumn and Winter landscapes. Most of the leak windows are positioned on the partition wall of the Canglang Pavilion garden building, corridor and semi-permeable courtyard. It is said that the whole garden has 108 distinct leak window patterns (Sun,2013).



FIGURE 14: THE CANGLANG PAVILION LOTUS LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 15: THE CANGLANG PAVILION POMEGRANATE LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS



FIGURE 16: THE CANGLANG PAVILION PLUM LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 17: THE CANGLANG PAVILION PLUM LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 18: THE CANGLANG PAVILION HAPPY CHARACTER LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 19: THE CANGLANG PAVILION FORTUNE OR GOOD LUCK CHARACTER LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS



FIGURE 20: THE CANGLANG PAVILION SWASTIKA SYMBOL LEAK WINDOW.
PHOTOGRAPH YUCHEN XIE, 2018.

The Lion Grove Garden

In contrast to the former garden, the leak windows of the Lion Grove Garden are diverse and their artwork exquisite, especially the top-grade leak windows featuring the patterns qin (music), qi (chess), shu (calligraphy), hua (painting) (see figures 21-24). Due to this diversity, the windows of this case study garden have cultural and artistic value for both the Chinese and international visitors (Han, 2012). Hu (1991) argues that Chinese art and culture have significant influence on the buildings and landscape design of the Lion Grove Garden.

CASE STUDY ANALYSIS



FIGURE 21: QIN,QI,SHU,HUA [THE LION GROVE GARDEN QIN (MUSIC) LEAK WINDOW]. (2015). RETRIEVED FROM [HTTPS://WWW.WEIBO.COM/P/1001603849410533580168](https://www.weibo.com/p/1001603849410533580168)



FIGURE 22: QIN,QI,SHU,HUA [THE LION GROVE GARDEN QI (CHESS) LEAK WINDOW]. (2015). RETRIEVED FROM [HTTPS://WWW.WEIBO.COM/P/1001603849410533580168](https://www.weibo.com/p/1001603849410533580168)

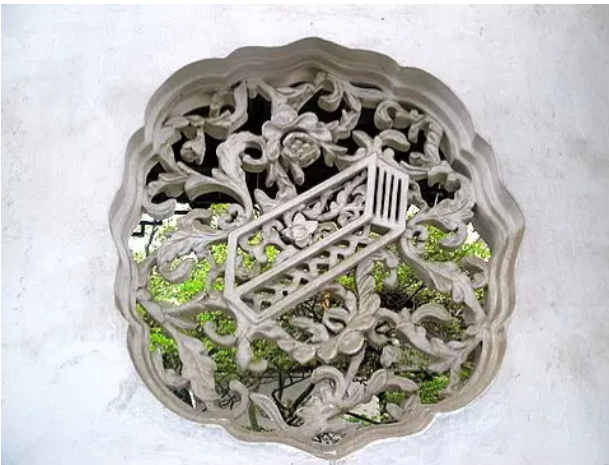


FIGURE 23: QIN,QI,SHU,HUA [THE LION GROVE GARDEN GARDEN SHU (BOOK, CALLIGRAPHY)) LEAK WINDOW]. (2015). RETRIEVED FROM [HTTPS://WWW.WEIBO.COM/P/1001603849410533580168](https://www.weibo.com/p/1001603849410533580168)



FIGURE 24: QIN,QI,SHU,HUA [THE LION GROVE GARDEN HUA (PAINT)) LEAK WINDOW]. (2015). RETRIEVED FROM [HTTPS://WWW.WEIBO.COM/P/1001603849410533580168](https://www.weibo.com/p/1001603849410533580168)

CASE STUDY ANALYSIS

The Humble Administrator's Garden

The leak windows in the Humble Administrator's Garden are simpler and more delicate, but also appear to be transparent and, in terms of design, lacking in imagination (see figures 25-27). They are constructed mainly out of modern cement material, which makes them low-cost and easy-maintenance. Besides the modern cement material, the Humble Administrator's Garden also has some wooden leak windows, as well as a very few made out of iron (Yuan,2013;Zeng,2017).



FIGURE 25: THE HUMBLE ADMINISTRATOR'S GARDEN DOUBLE
CROSSED LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS



FIGURE 26: THE HUMBLE ADMINISTRATOR'S GARDEN THREE-COLUMN LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 27: THE HUMBLE ADMINISTRATOR'S GARDEN GRID LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS

The Lingering Garden

There are 93 leak windows with more than 60 types in the Lingering Garden, a few of which are similar to each other. The window patterns are varied, and the basic patterns can be divided into two types, geometric form and natural form, but they are also often used in combination (see figures 28~31). Geometric patterns are usually composed of straight lines, arcs, circles and rectangles. Most of them are square, and the general side length is about 1.2 meters. There are also some rectangular leak windows in the Lingering Garden. These are constructed according to a different environment and hence the window dimension is appropriate to their position on the garden building walls.

The Lingering Garden, and other three Suzhou gardens, are in the Jiangnan region, which has a high rainfall and humid climate. Consequently, the buildings of this garden are designed for high water levels, and to aid dehumidification and indoor floor water absorption. For example, the Lingering Garden hexagonal windscreen leak window is designed so that it can be removed or opened depending on the climate and indoor environment (He and Schnabel,2018).



FIGURE 28: THE LINGERING GARDEN HEXAGONAL WINDSCREEN LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS



FIGURE 29: THE LINGERING GARDEN RECTANGULAR LEAK WINDOWS. PHOTOGRAPH YUCHEN XIE, 2018.

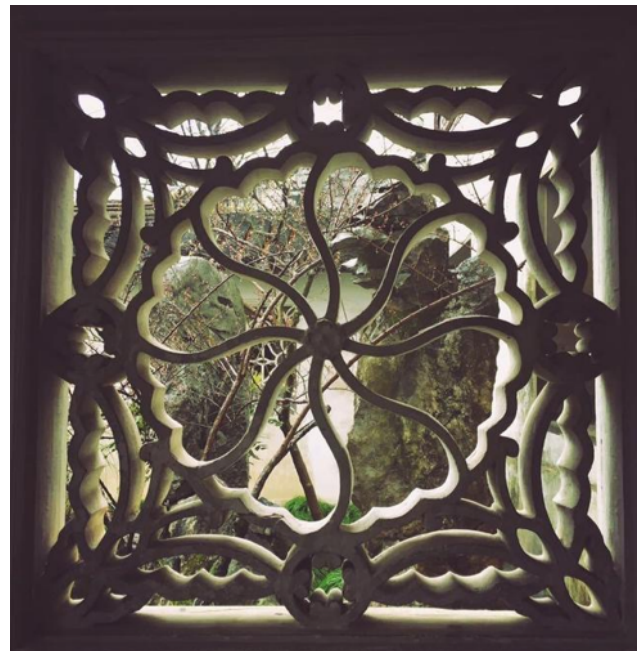


FIGURE 30: THE LINGERING GARDEN GEOMETRIC PATTERN LEAK WINDOW. PHOTOGRAPH YUCHEN XIE, 2018.

CASE STUDY ANALYSIS



FIGURE 31: THE LINGERING GARDEN GEOMETRIC PATTERN LEAK WINDOW.
PHOTOGRAPH YUCHEN XIE, 2018.

This case study analysis of four of the classical Suzhou gardens shows the range of symbols, patterns, and layout used in their construction. These leak windows not only have visual effect, but also aesthetic and functional value for both Chinese and international visitors to this heritage site. Over the years, many new leak windows have been built. However, some of these newly built leak windows have lost their cultural function, and lack artistic beauty. This is my primary reason for exploring the connection between the leak windows, their symbolism, and the gardens in which they are found. In the following section I discuss how these findings led to the process of designing my own leak window artworks. The process is divided into two phases. In the first, I explore how to make the Gardens' Eyes reflect the different cultures of the case study gardens. In the second, I explore how the Gardens' Eyes should be deployed as a visual guidance system.

DESIGN PROCESS FOR THE GARDENS' EYES

STAGE ONE: BUILDING THE VISUALGUIDANCE SYSTEM

This first stage involved exploring how to create a new small model concept that captures the essence of the historical and cultural values of each of the four case-study gardens. This exploration was inspired by late Ming dynasty gardener Cheng Ji's views that "opening the window in gardens has intention to borrowing the scenery" and that the "same object, or same thing, before opening the leak window, is only viewed as object or thing, whilst it will be viewed as a landscape paint if a leak window is opened" (Zhang,1993,p.271).

Before I started designing my leak window artworks, I needed to decide whether the visual guidance system would be purely planar (see figure 32), or multi-angled and three-dimensional (see figure 33). Regarding which one is easier to identify for the tourists when they visit the gardens for the first time, or not familiar with the gardens from another culture, there is no absolute correctness. But, since the latter is more aesthetically pleasing due to the three-dimensional geometry, I chose to employ a 3D multi-angled design. As a designer this stereoscopic work is more attractive to myself, while the planar two-dimensional design is more in line with the traditional guidance system, and not so innovative. Another major reason for choosing a 3D multi-angle stereo design is that its holistic and modern appearance is more in line with the purpose of designing the new type of visual guidance system for the Suzhou garden leak windows. In addition, the 3D multi-angled design allows me to more easily place different aspects of the landscapes into it and so re-situate the visual guidance system into different landscapes.

DESIGN PROCESS



FIGURE 32: THE PLANAR VISUAL GUIDANCE SYSTEM MODEL. YUCHEN XIE, 2018.



FIGURE 33: 3D MULTI-ANGLED VISUAL GUIDANCE SYSTEM MODEL. YUCHEN XIE, 2018.

DESIGN PROCESS

In making my first visual guidance system design, I drew inspiration from the unique ice crack pattern of the Song dynasty (960-1279) gardens. The polygonal ice crack pattern also derives its origin from the saying TianYuan, DiFang 天圆地方, which means the sky is round, the earth is square. The ice crack pattern is widely used in the Suzhou garden leak windows. They are transparent and interlaced and can produce endless associations. The ancient craftsmen used these vertical and horizontal lines on traditional garden art and so produced a transparent and interlaced ice crack pattern that expressed the good wishes of the society at that time. The front part of the design is a leak window consisting of ice cracks (see appendix 15), also known as the “moon hole,” which is made into the shape of a full moon on the blank wall (see figure 34). It appears to be a picture frame inlaid with scenes, viewed from different angle, the picture in the frame is different.



FIGURE 34: THE DETAILS OF THE DESIGN PROCESS OF THE FIRST DESIGN MODEL. YUCHEN XIE, 2018.

DESIGN PROCESS

At the same time, I found that I also needed to consider the unique landscape function of the Song dynasty garden window. The horticultural style of the Song dynasty is built on the concept of conceptual conception, which can be completed through the three sequences of the overall geographical location selection, layout planning and landscape combination. Both layout planning and landscape integration play an integral role in the functioning of the ice-crack pattern leak window. Therefore, in order to better show the function of the leak window with ice crack pattern, another part of the design was made of split half-window, which is the unique structure seen in the Canglang Pavilion built in song dynasty. Watching the scene inside the Canglang Pavilion seems like a dynamic ink painting. (see figure 35)



FIGURE 35: THE DETAILS OF THE DESIGN PROCESS OF THE FIRST DESIGN MODEL. YUCHEN XIE, 2018.

DESIGN PROCESS

In regard to the art of window framing, the Suzhou garden leak windows are divided, according to the features of the window core, into two categories, namely, hard-scape leak windows and soft-scape leak windows. Hard-scape refers to the form of a window pattern composed of regular lines, while soft-scape refers to a series of lines that are more natural and irregular.

I decided to employ the soft-scape in designing the second leak window. This leak window draws inspiration from the Lion Grove Garden of the Yuan dynasty (1279-1368). The soft-scape window is typical of the widely used soft landscape patterns and natural motifs, that are mostly taken from animals and plants, that symbolize auspiciousness or elegance. These motifs include the plants pine, cypress, peony, plum, bamboo, orchid, chrysanthemum, banana, lotus, bergamot, peach, and pomegranate and belong to the theme of flowers. In addition, there are lions, tigers, dragons, bats, magpies, phoenixes and pine cranes that belong to the subject matter of vases, cornucopia, four treasures of the study, as well as the expression of dramatic characters and stories, hieroglyphics. The subject matter of the characters is mostly based on the scenes of legends, Buddhism and drama.

The selection of patterns, fan, coin and plants in this second design reflect Yuan dynasty garden architects use of auspicious and elegant patterns to express the cultural values of peace, happiness, and yearning for a better life. My aim in using these patterns, as well as photographs taken of the Yuan dynasty garden, is to symbolically represent these Chinese values, as well as help visitors appreciate the mood of visiting the Lion Grove Garden. (see figure 36 and appendix 17~18)

DESIGN PROCESS



FIGURE 36: THE DETAILS OF THE DESIGN PROCESS OF THE SECOND DESIGN MODEL.
YUCHEN XIE, 2018.

DESIGN PROCESS

The last two works designed according to the characteristics of the Ming (1368-1644) and Qing (1644-1912) dynasties. Since the Ming dynasty, and with the progress of time, the design of the leak window has become more functional. The owner of the garden hopes to pay more attention to the practicality of the window while retaining the aesthetics of the leak windows. Consequently, the main architectural structures housing the leak window are the garden building veranda and wall. This placement allows the visitor to the garden to not only appreciate the different contents in the window, but to also enjoy the scenery outside the window while walking along the length of the corridor. I thus decided to incorporate this leak window functionality into my leak window prototype designs. The design in figure 37 is based on the long leak windows in the Humble Administrator's Garden, which usually falls to the ground and is installed between the upper and lower sill. It has both the function of the window and the function of the door, each long leak window corresponds to different attractions in the Humble Administrator's Garden. In order to fully demonstrate the practicality of the long leak window of the Humble Administrator's Garden, I designed it as a movable structure to make the visitors more intuitive to observe different ways of the opening in different locations. (see figure 38)

DESIGN PROCESS

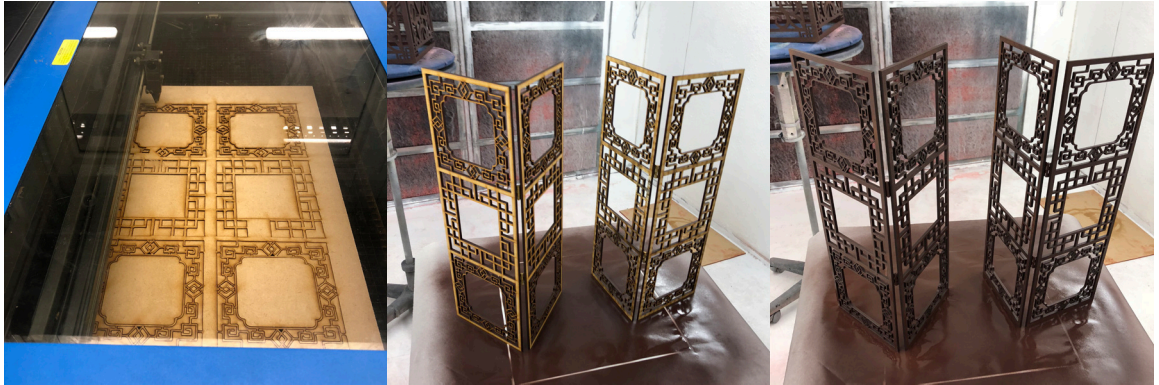


FIGURE 37: THE DESIGN PROCESS OF THE THIRD DESIGN MODEL. YUCHEN XIE, 2018.

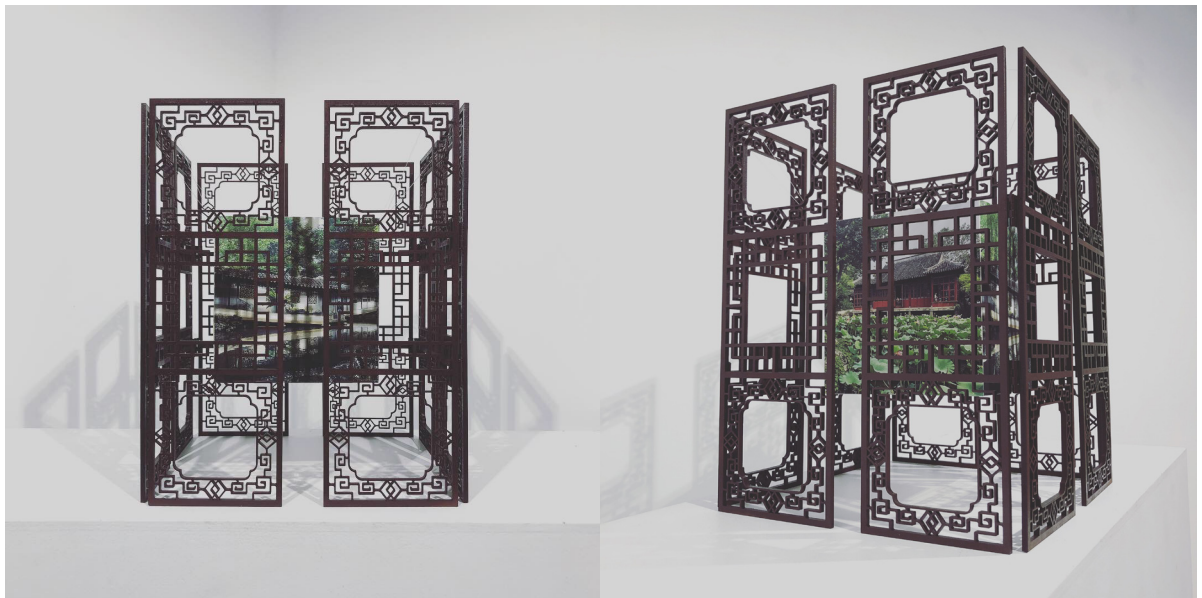


FIGURE 38: THE THIRD DESIGN MODEL. YUCHEN XIE, 2018.

DESIGN PROCESS

Figure 39 presents the picture of the fourth leak window design. The combination of leak window geometry and garden scenery forms a unique code that is cultural, aesthetic, and functional. Inspired by the unique rectangular window in the Qing Dynasty, and different from the leak windows of the previous eras, the center of the design is flat with the line of sight. Through the window, the line of sight penetrates from the window to the inside space, more convenient for visitors to view the garden.



FIGURE 39: THE FOURTH DESIGN MODEL. YUCHEN XIE, 2018..

DESIGN PROCESS

As the main part of the new visual guidance system, the Gardens' Eyes will contain the most distinctive window features and garden views of the four case-study gardens. In order to maintain consistency throughout the designs, I decided to adopt the classical square structure of Chinese history. The square structure type of leak window design is also more convenient for my current experimental process, which looked into different sizes. The Gardens' Eyes prototypes and developments were then tested to check the viewing and reconcilability of different sizes. After having created leak window prototypes based on the cultural symbolism and meaning of these time-honored gardens, I set about thinking how they could be developed further as a visual guidance system for the garden visitor.

DESIGN PROCESS

STAGE TWO: DEPLOYING THE GARDENS' EYES INTO THE VISUAL GUIDANCE SYSTEM

A question the project attempts to answer is whether the project design form, pattern, and function can represent a key attraction in the garden. The challenge, within the limitations of the traditional visual guidance system, is to use the leak window to capture the essence of the Canglang Pavilion Garden, the Lion Grove Garden, the Humble Administrator's Garden and the Lingering Garden. In this section, the leak window is called the garden eye due to its symbolic function as an element of orientation and introduction to various attractions in the case-study gardens. In this design development, I explored merging the garden eye with the traditional two-dimensional garden plan view created for each garden.

The plan views of the four case-study gardens are taken from the current Suzhou garden tour brochure (see figure 40). By definition, a plan view is a flat representation of the physical location, the boundaries, the buildings, and garden features of the garden. The text in the picture represents the different characteristics of the garden. The plan view of the garden is one of the most traditional ways to provide visitors with information on excursions of the garden. This traditional plan visual guidance system serves as a graphical guide for visitors, providing visitors with precise information about the names of the garden and its attractions, as well as information regarding excursions to different sites within the garden. However, whether the garden eyes can enrich this traditional visual guidance system is something to be examined.

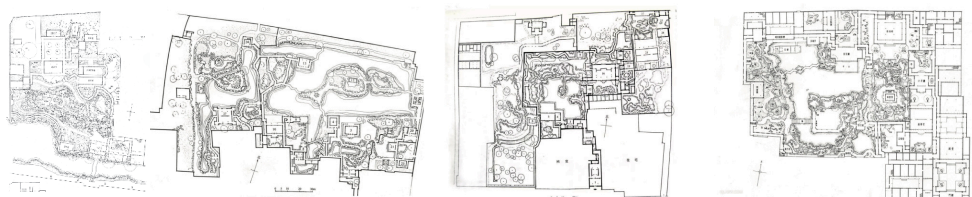


FIGURE 40: [THE PLAN VIEWS OF FOUR CASE-STUDY SUZHOU GARDENS]. (2018). RETRIEVED FROM [HTTP://WWW.GGXX5.COM/NEWS/54UU5A2Q5P6X5OML57UY5BMZ6Z2I5ZU%2B.HTML](http://www.ggxx5.com/news/54UU5A2Q5P6X5OML57UY5BMZ6Z2I5ZU%2B.HTML)

DESIGN PROCESS

The difference between the former brochure plan views and the new Gardens' Eyes visual guidance system is that this system's plan views will incorporate different attractions' photos (see figure 41). The area marked with the photos indicates that there is a Gardens' Eyes visual guidance system near this area. When visitors to the garden arrive at their destination, the Gardens' Eyes visual guidance system will be deployed at the most prominent location at the entrance to each attraction. This placement will allow tourists unfamiliar with the Suzhou gardens to gain a preliminary, basic impression and understanding of the viewing styles, cultural connotations and even the purpose of the original garden owners in creating these historical gardens.



FIGURE41: THE DESIGN PROCESS OF THE NEW PLAN VIEW OF THE TRADITIONAL SUZHOU GARDEN. YUCHEN XIE, 2018.

DESIGN PROCESS

In the actual display of the system, the entire new visual guidance system will contain a brand-new garden plan view, which shows clearly the famous attractions in the garden (see Figure 42). These garden attractions will be chosen for their unique meanings, such as special historical stories and unique scenery, and will be clearly displayed as photographs on the two-dimensional garden plan. The garden eye will dynamically supplement this guidance information through installation in front of the garden plan. The combination of traditional two-dimensional and contemporary three-dimensional elements constitutes an entire garden symbol (see Figure 43).



FIGURE 42: DESIGN MODEL FINAL DISPLAY EFFECT. YUCHEN XIE, 2018.

DESIGN PROCESS



FIGURE 43: DESIGN MODEL FINAL DISPLAY EFFECT.
YUCHEN XIE, 2018.

The process of designing a new visual guidance system is distinguished from a traditional planar guide view. For example, the different garden eye leak windows are designed to show different scenes, to tell different stories and to express different meanings. The leak window plays a rich and indispensable role in traditional Chinese architecture and classical gardens. In the Suzhou classical gardens, the leak window is in line with the taste and spiritual pursuit of the garden owners and builders of these gardens, who aspired to political status, good fortune, and forbearing. This last ideal is also in keeping with the aesthetics and concept of nature originating from Taoism and Confucianism, where it is stated in “although it is made by people, it comes from heaven” (Jin,2013). The literati artisans did not deliberately set out to design the entire garden during its development and construction but improvised during the garden process. The garden eye leak windows aim to recreate this effect by introducing visitors to different scenes so that they feel an appreciation for the original owner/designers.

DESIGN PROCESS



FIGURE 44: A SUZHOU GARDEN ATTRACTION.
PHOTOGRAPH YUCHEN XIE, 2018.



FIGURE 45: A SUZHOU GARDEN ATTRACTION.
PHOTOGRAPH YUCHEN XIE, 2018.

REFLECTION

entilation and the passage of light are the fundamental functions of all kinds of windows irrespective of whether the window is positioned on a high wall, deep courtyard, or attic corridor. Even if the scenery is beautiful, if there are no windows, visitors will feel dull, depressed, and therefore unable to appreciate the scenery. Besides ventilation and allowing in light, the leak windows have visual effect, aesthetic and functional value. The leak windows can use external resources to remove obstacles in a certain way, break the boundary of the garden, expand the space range of landscape objects, and enrich the ornamental features. Moreover, leak windows allow visitors to see the scenery outside the room, corridor or attic. The different perspectives and visual effect generated by the leak windows thus allows viewers to appreciate the distinct aesthetic and functional value of the garden design.

The regular geometric window frames are often seen in the Suzhou gardens, while the number of other special shapes is small. This is because the regular geometry has long been used in Chinese history and, more importantly, it is easy to build and has a reasonable force so that it is secure. Because of the characteristics, simple geometric window frames are widely used around the world, and are common in both eastern and western buildings. By contrast, the irregular shapes are formed by making some changes on the basis of common geometric shapes. For example, round angle treatment, wave edge treatment, and hexagonal arc treatment are frequently seen in eastern buildings, but less frequently in western buildings.

REFLECTION

These irregular shapes also come from the refinement of life, culture, art and technology. They are not simple shapes, but more importantly, they are culturally connotative. The leak windows may explain the ordinary life of things with thousands of years of cultural essence and customs. Therefore, things are not only the material, but also embody the soul of that culture. For example, the square and circle are often adopted by Chinese artists because they are simple in shape, easy to recognize and build, and also because they embody the Chinese cultural concept of round Heaven and square Earth, reflecting the way ancient people thought about the world. Another example, the pomegranate is a symbol of multiple blessings, prosperity, wealth and good luck. It is also the sacred fruit of sacrifice in Buddhism.

Chinese classical gardens were built by literati who were excellent at writing poetry, and painting, and who also excellent in the art of gardening. Most Chinese classical gardens were built based on painting and poetry, and many designs are derived from artworks such as poetry and painting. Therefore, Chinese classical gardens, in particular the Suzhou gardens, are rich in poetic and pictorial splendor. Moreover, literati gardening is a very common phenomenon, so the knowledge, thinking, talent and elegant life of the literati are also reflected in the garden. The leak windows with the following patterns qin (music), qi (chess), shu (calligraphy), and hua (painting) reflect the life of the literati (Qing and Davis, 2016).

The leak windows in the Suzhou gardens are beautiful and can be considered a scene. With the introduction of contemporary material and the rapid development of construction industry, these beautiful leak windows are applied not only in the garden, but can now be used in other places, such as in modern interior landscape design. There are many successful examples of leak windows in some countries of the world, such as USA, Japan and Singapore. However, some individual designers and developers do not understand the characteristics of the leak window, their application to garden landscape design, or their cultural connotation. They do not consider their environmental or cultural function. Instead, they put them everywhere regardless; long windows, half windows, big windows and small windows. As a result, the newly built leak windows have lost their cultural function, and lack artistic beauty.

CONCLUSION

CONCLUSION

The basic starting point of this research was to re-examine the symbolic function of the visual guidance system design for the visitor to the Suzhou gardens. I decided that in order to do this I needed to explore how an identifiable landscape could be incorporated into a new visual guidance system so as to avoid being just a generic traditional guide design with insufficient visual effect. The visual effect and even the unique functionality can make the visual guidance system easy for visitors to better understand the connotation of the gardens at first sight.

I studied four different styles of Suzhou gardens from the Song dynasty to the Qing dynasty, four gardens with different landscapes, windows, and landscape design cultures, and then incorporated these elements in the reconfiguration of the leak window patterns. I also included elements of the Suzhou gardens' landscapes as well as different angles of the landscape to produce what I think reflects the various aspects of the gardens from these different eras.

My response to the main challenge of trying to capture the essence of the Suzhou gardens was to develop a new visual guidance system - which I call the Gardens' Eyes - as a way to test whether this could be achieved. This has successfully been completed by examining the design issues in representing the Suzhou gardens through the thesis project visual guidance system. Another purpose of this study is to address the need for the reconcilability and aesthetics of visual guidance systems in modern gardens.

CONCLUSION

The traditional two-dimensional visual guidance system has limitations, because it can only provide a certain amount of information for ordinary tourists, such as directions and routes. It cannot provide an introduction and insight in to the garden's historical and cultural function. In order to solve the limitation of this basic information prompt, and to give further meaning, I created a three-dimensional, material system that emphasized the cultural symbolism, pattern design and functional nature of the historical leak window. This new three-dimensional visual guidance system allows visitors to the Suzhou gardens to gain enhanced appreciation of the garden's cultural history in a way that is more familiar than traditional flat-screen systems. For visitors familiar with Chinese cultural symbolism, the visual symbols and clues will better connect them to the cultural and connotative aspects of the four selected gardens.

Perhaps the ultimate test of whether the garden eye leak window successfully captures the main features of the Canlang Pavilion, the Lion Grove Garden, the Humble Administrator's Garden, or the Linger Garden, is whether visitors who visit these gardens for the first time can appreciate and understand their charm and cultural significance. I argue that by linking the leak window to the garden landscape and to the garden plan view does this.

The purpose of the project was to engage in a practice-led study of this complex subject. The theoretical and applied research involved testing and answering some questions that reflect my personal experience and ethnic perspective. My hope is that the project will also benefit other visual guidance system designers who want to create designs that are reflective of their culture and history.

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IMAGE LIST

IMAGE LIST

Figure 1: The Canglang Pavilion. Photograph Yuchen Xie, 2018.

Figure 2: The Lion Grove Garden. Photograph Yuchen Xie, 2018.

Figure 3: The Humble Administrator's Garden. Photograph Yuchen Xie, 2018.

Figure 4: The Lingering Garden. Photograph Yuchen Xie, 2018.

Figure 5: Example of the Suzhou gardens' traditional visual guidance system. (2016). Retrieved from <http://www.huitu.com/design/show/20161215/152204969020.html>

Figure 6: The leak window prototype combining cultural symbolism and garden view. Photograph Yuchen Xie, 2018.

Figure 7: Are You Fire, Earth, Ice or Water? (2018). [Auspicious cloud pattern designs]. Retrieved from <http://www.playbuzz.com/amberj39/are-you-fire-earth-ice-or-water>

Figure 8: BAGUA [Auspicious Eight Immortals pattern design]. (2016). Retrieved from https://www.nationsonline.org/oneworld/Chinese_Customs/bagua.htm

Figure 9: Plum, Orchid, Bamboo and Chrysanthemum [Auspicious plum, orchid, bamboo and chrysanthemum designs]. (2017). Retrieved from <https://u.sanwen.net/subject/qpmfiqqf.html>

Figure 10: Japanese traditional garden [Japanese garden production in Beijing No. 5 Mansion]. (2017). Retrieved from <http://www.dshgyl.com/rstyjg/149.html>

Figure 11: Hang Dinh. (1992). https://www.123rf.com/photo_19921217_bronze-soldiers-on-patrol-at-korean-war-memorial-washington-mall-washington-dc.html [Stock Photo - Bronze Soldiers on Patrol at Korean War Memorial, Washington Mall, Washington DC].

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Figure 21: Qin, Qi, Shu, Hua [The Lion Grove Garden Qin (music) leak window]. (2015). Retrieved from <https://www.weibo.com/p/1001603849410533580168>

Figure 22: Qin, Qi, Shu, Hua [The Lion Grove Garden Qi (Chess) leak window]. (2015). Retrieved from <https://www.weibo.com/p/1001603849410533580168>

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Figure 40: [The plan views of four case-study Suzhou gardens]. (2018). Retrieved from <http://www.ggxx5.com/news/54uu5a2Q5p6X5omL57uY5bmz6Z2i5Zu%2B.html>

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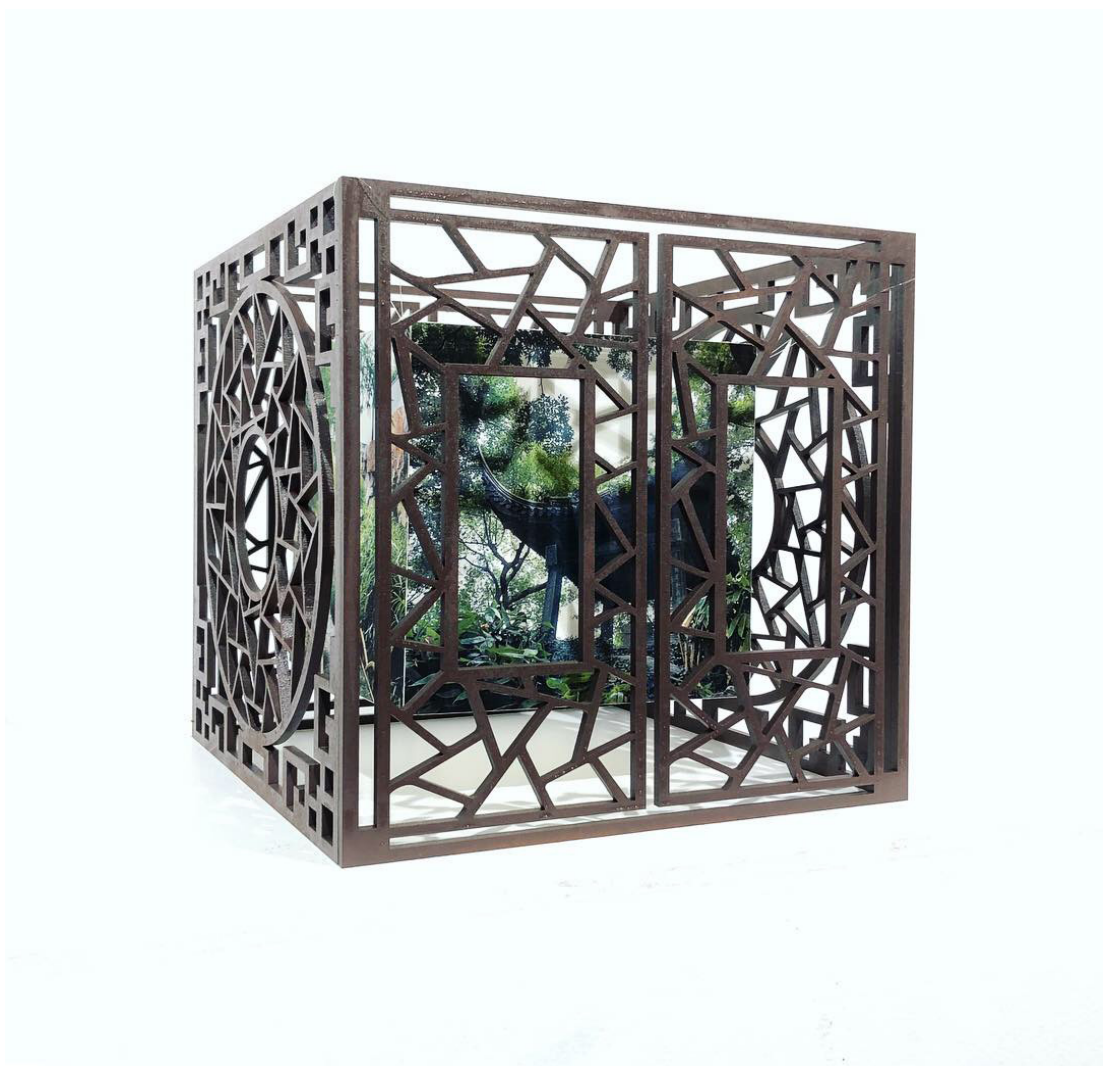
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APPENDIX 2: FINAL DESIGN MODEL FOR THE CANGLANG PAVILION, PHOTOGRAPH YUCHEN XIE, 2018.

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APPENDIX 3: FINAL DESIGN MODEL FOR THE CANGLANG PAVILION, PHOTOGRAPH YUCHEN XIE, 2018.

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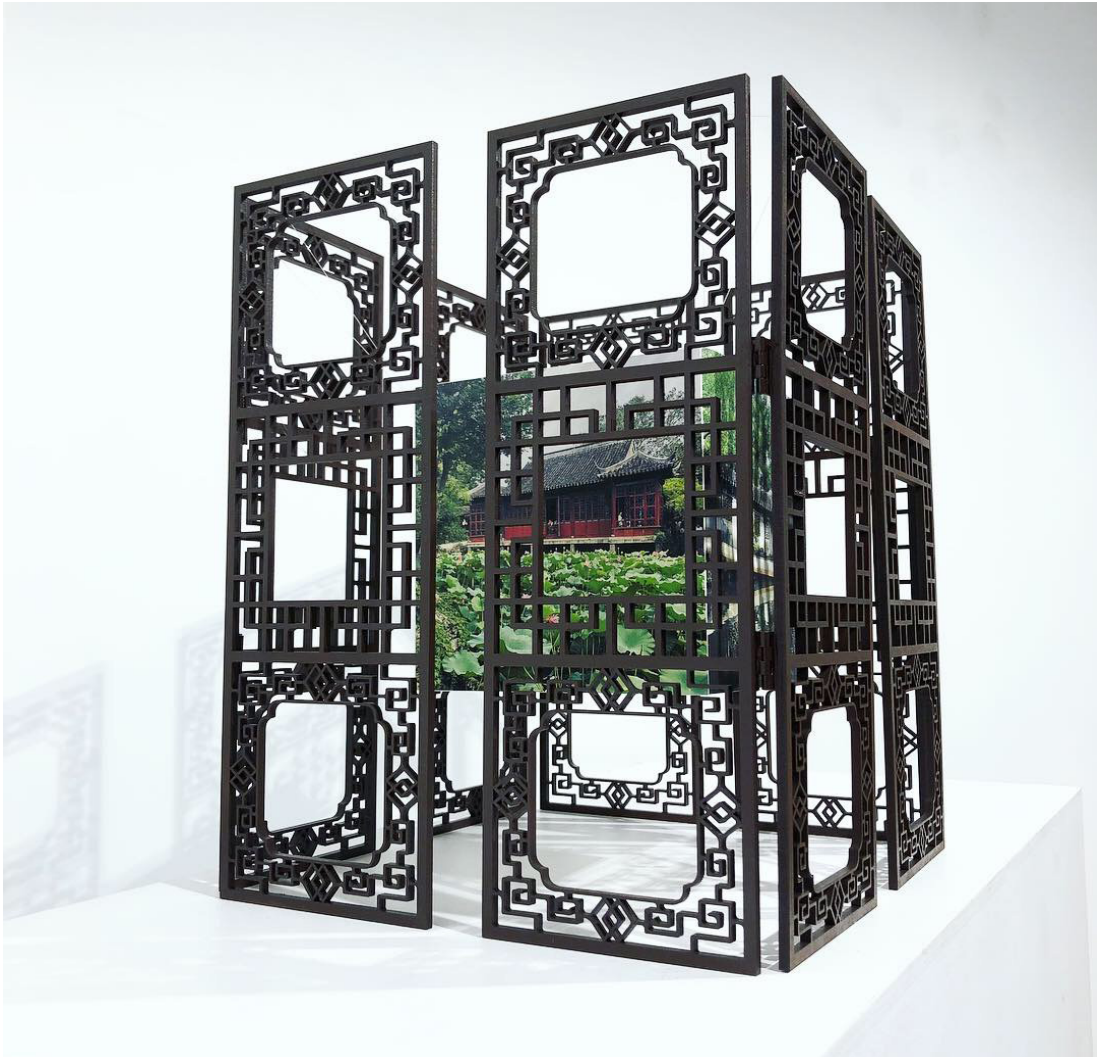
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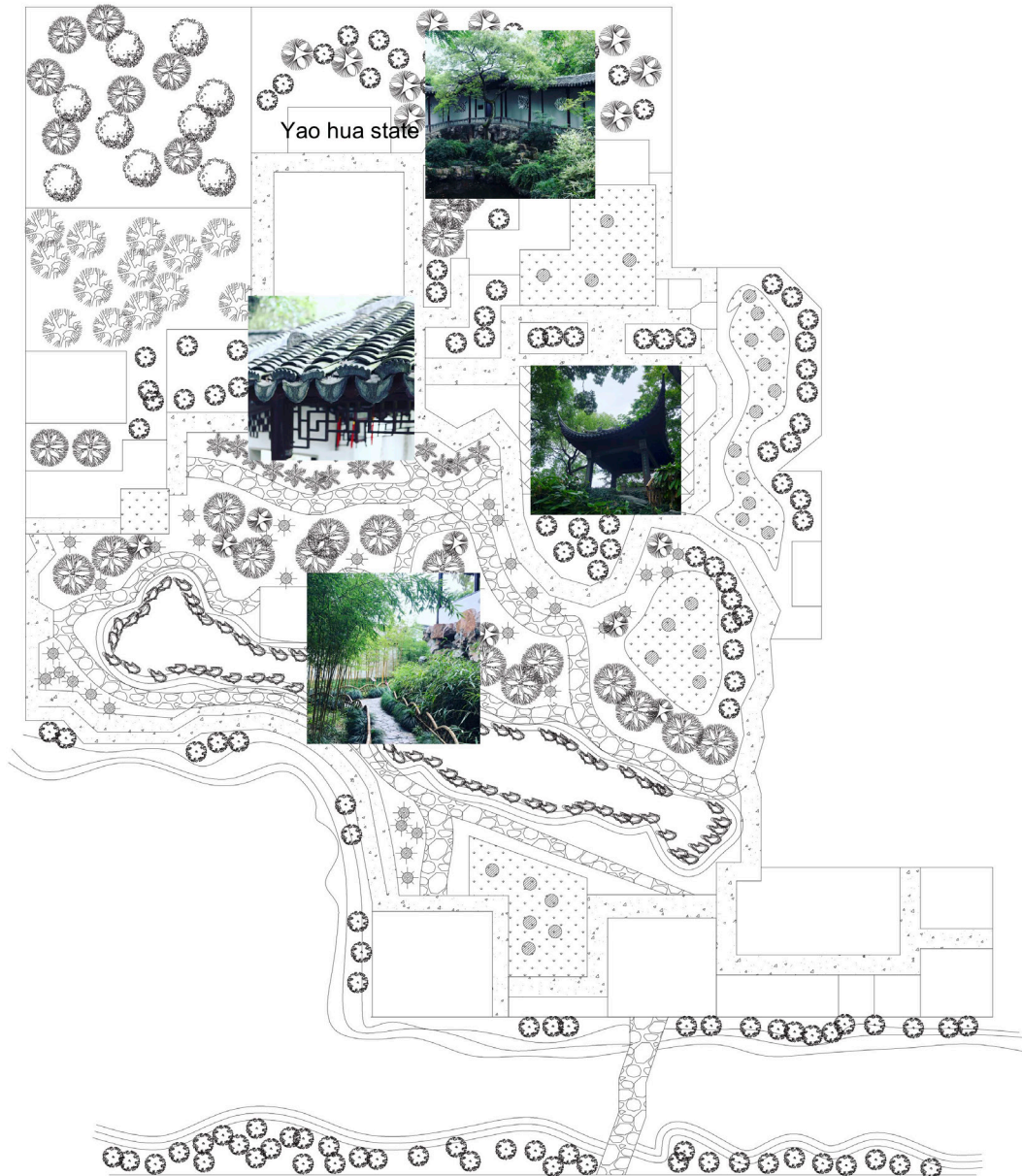
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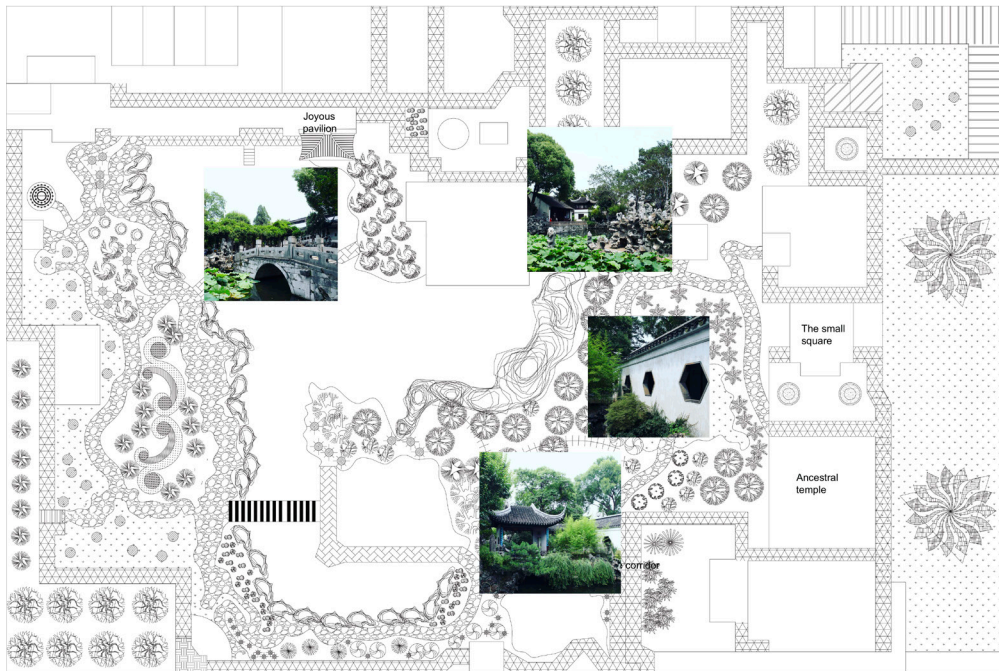
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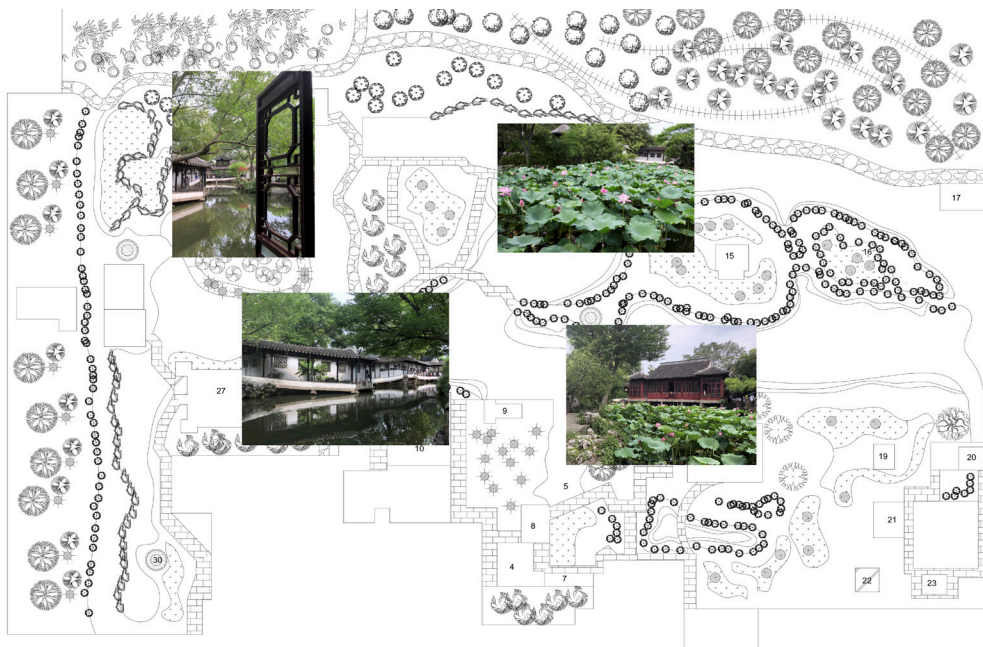


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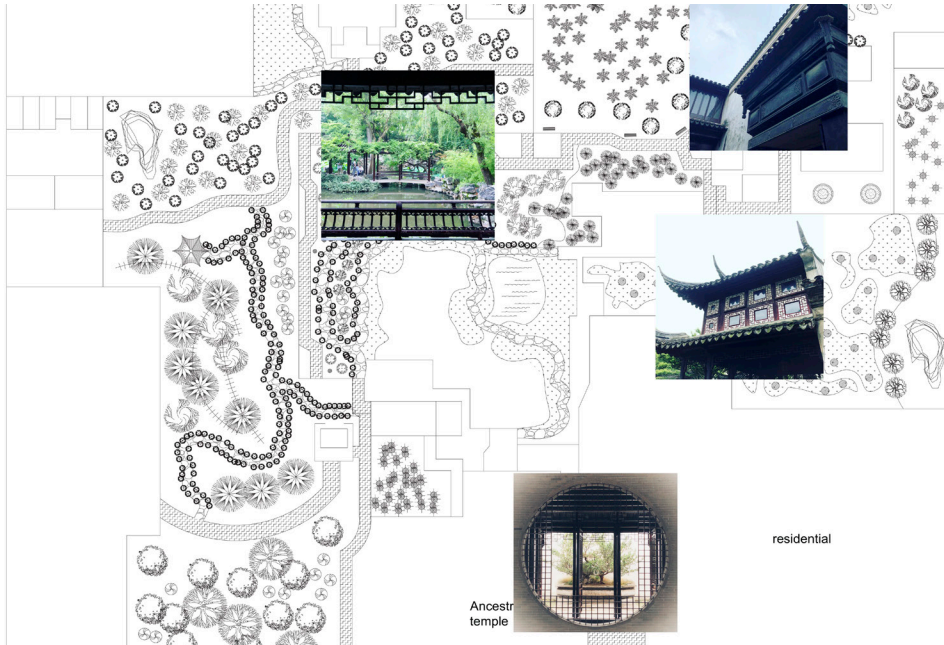


APPENDIX 13: THE NEW PLAN VIEW FOR THE LION GROVE GARDEN, AI DESIGN PLUS PHOTOGRAPHS, YUCHEN XIE, 2018.

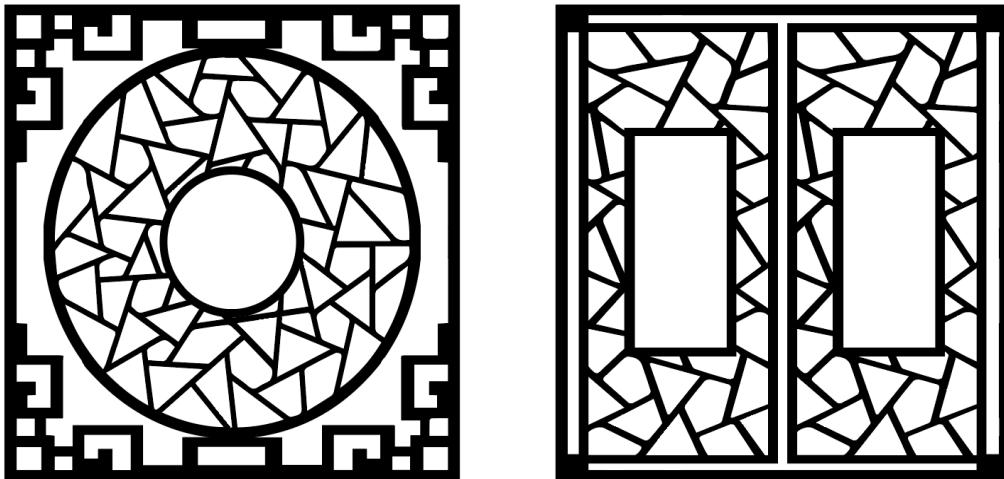


APPENDIX 14: THE NEW PLAN VIEW FOR THE HUMBLE ADMINISTRATOR'S GARDEN, AI DESIGN PLUS PHOTOGRAPHS, YUCHEN XIE, 2018.

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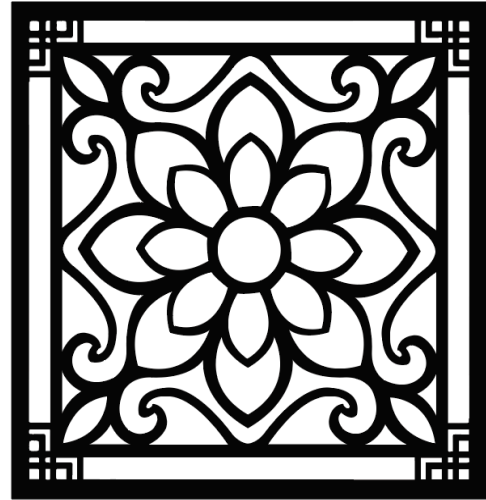
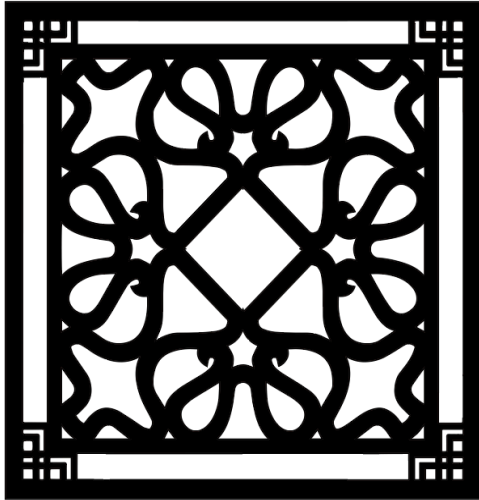


APPENDIX 15: THE NEW PLAN VIEW FOR THE LINGERING GARDEN, AI DESIGN PLUS PHOTOGRAPHS, YUCHEN XIE, 2018.

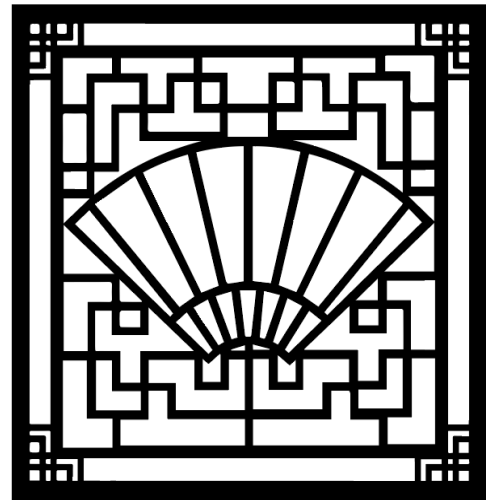
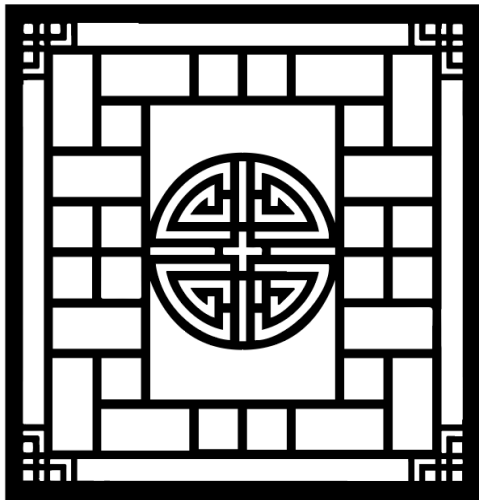


APPENDIX 16: THE PATTERNS OF FINAL DESIGN MODEL FOR THE CANGLANG PAVILION, AI DESIGN, YUCHEN XIE, 2018.

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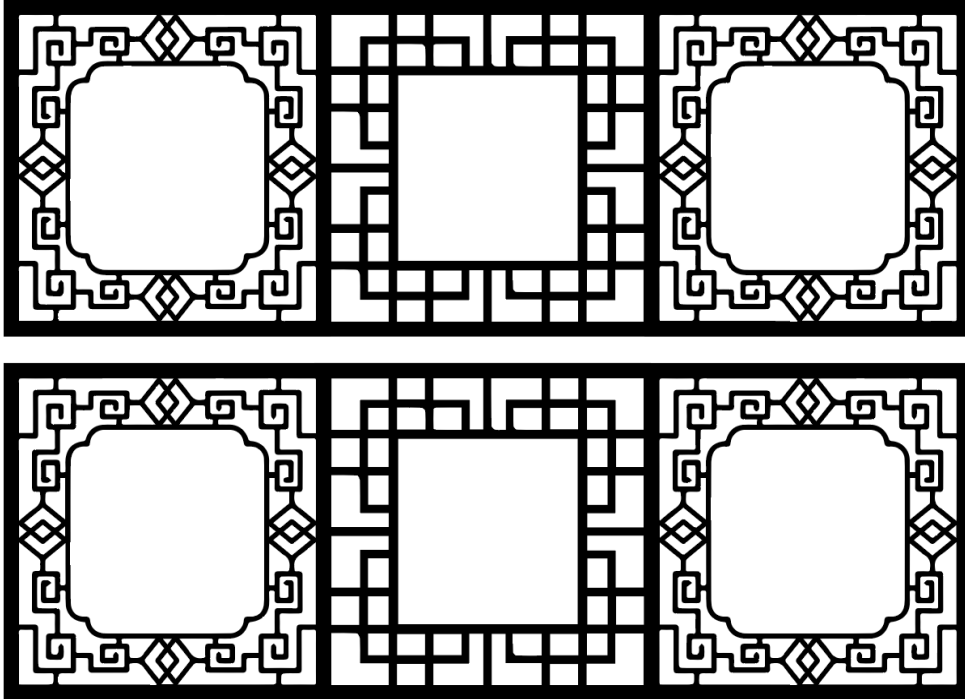


APPENDIX 17: THE PATTERNS OF FINAL DESIGN MODEL FOR THE LION GROVE GARDEN, AI DESIGN, YUCHEN XIE, 2018.

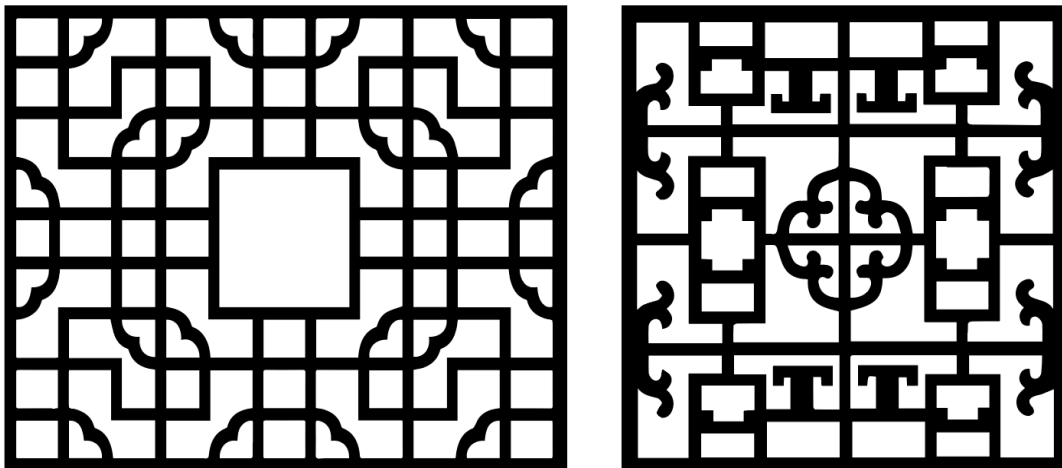


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