

Mutual Translation between "Painting and Landscape" – A Case Study on the Digital Preliminary Restoration of "Garden Image" in the Engraving Illustrations of Ancient Books in the Ming and Qing Dynasties

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Abstract—The digital visual operation of computer can serve as a "design medium" and "analytical tool". In this study, the "garden image prototype" in ancient Chinese prints in the Ming and Qing Dynasties are transformed into the visualization construction of computer 3D model. Moreover, the engraving illustrations of ancient Chinese books also spread to the world with the derivative function of "garden atlas". As the "sketch" of landscape architecture, garden image can still accurately convey the design intention in landscape schema language, spatial scale diagram and design methodology. The preliminary restoration of digital landscape in this paper does not emphasize precision, or one-to-one restoration, but a kind of fuzzy and experimental virtual digital model exploration from the aspects of space situation, garden elements and construction methods.

1 PREFACE

As a special type of painting art and a kind of reproduction art, or mass reproduction of works, the orientation of visual image of "garden image" in the engraving illustrations is very clear—the function of atlas in landscape architecture and landscape gardening. The engraving of garden prints is similar to the construction drawings, a "semi-construction" process. The "garden image" strengthens the feeling of building in landscape construction and the intuitive understanding towards construction materials. To regard the "garden image" in the engraving illustrations of ancient books in the Ming and Qing Dynasties as a kind of "image text of landscape description", it means to grasp the essence of landscape design through painting, model, drawing and atlas, the technical operations which point to "space creation". As for landscape painting, it is not only a copy of the external world, but also a selected and refined image, which indirectly reflects the belief and desire, explains the source of aesthetic ability, and internalizes the external landscape into the image of one's own mind and then, constructs the landscape image in two-dimensional space. Moreover, as a special type of landscape painting and a transformation of attentive selected environment, "garden image making" expresses the concept behind it, that is, as a concrete form language tool, "garden image" shares its unique communication mode by conveying the author or designer's concept and emotion through the spatial organization of the picture. Meanwhile, Chinese traditional gardening has a long history of "garden images on paper". In the book *Records of Dreams and*

Shadows in the Past written by Xu Kang in the Qing Dynasty, he clearly stated the importance of illustrations in ancient as "the ancients attached importance to both words and pictures, for there must be pictures attached to words. Two volumes of *Portraits method of Confucius and his Disciples* in *Art and Culture History, Book of Han* demonstrate the pictures of Confucius and his Disciples. Wu Liang Temple is carved with 72 disciples, which are probably in this way. Moreover, different kinds of military tactics recorded in the military books are also illustrated with pictures...In the Jin Dynasty, a poem of Tao Qian goes that: '*browsing and Viewing the Painting of Mountains and Seas*', it can be said that all ancient books have pictures attached." Professor Fan Jingzhong said in the article *Preface to Records of Dreams and Shadows in the Past* published in the Art Garden and Pearl dust Series Books Edition, China Academy of Fine Arts Press: "none of Xu Kang's works were published before his death... in the 23rd year of the reign of Emperor Guangxu, Jiang Biao engraved *Records of Dreams and Shadows in the Past* into the *Lingjian Pavilion Series Books*." While Jiang Biao's Preface to *Records of Dreams and Shadows in the Past* carved from Xu Kang' manuscript clearly mentioned the important of "Atlas" in the Chinese traditional art pedigree as "everyone is in pursuit of things in the new generation, I'm afraid that no one can appreciate the ancient cultures such as epigraphy, calligraphy and painting, atlas and books after 20 years."^[1]

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2 SPATIAL CONNECTION BETWEEN PAINTING AND LANDSCAPE

The "space" in painting is a kind of special visual and spiritual space which can also be regarded as the image text record of actual site, or the "placescape" construction of the virtual landscape architectural form. Scenic landscape conveys special "sentiment" in the creation of painting art. The beauty of landscape and garden art has stood the test of evaluation in rounds. "Beauty permeates and surpasses ugliness", which is the alchemy of images. The cultural awareness behind the garden paintings in the Ming and Qing dynasties also conforms to the aesthetic standards of landscape appreciation. Qian Gu, in Ming Dynasty, cleared several questions behind construction such as "Why is the garden like this? Why did people at that time live in such an environment? Why is it built like this?" in his *scroll painting Qiuzhi Garden* (Fig. 1) "On the basis of realism to artificial garden, they try to express the life ideal of the garden owners, and reflect their integrity and aspiration of " being friends with nature like mountains and wild waters "in downtown areas. Such works have become a prominent artistic phenomenon in the Wu School of painting, among which Qian Gu's *scroll painting Qiuzhi Garden* is a typical one. At the invitation of his friend Zhang Fengyi, Qian Gu described the scenery of his home in spring and summer. At the frontispiece of the volume, there are three words "Wen Yu Guan" written by Wen Zhengming, and at the end of the volume is Wang Shizhen's running script *Record of Qiuzhi Garden*. Starting from the gate of the

garden on the right, the painter takes Yikuang pavilion, Fengmu hall and Shangyou study as the center. There are courtyards in front and gardens in the back. All sites such as Caifang road, Wenyu house and Xiangxue corridor written in *Record of Qiuzhi Garden* by Wang Shizhen can be seen. It seems that the grand scenes of the past when literati gathering and chatting in the famous garden, where we could enjoy the beauty of four seasons, vividly leap before our eyes. Although it is realism, it's never a simple representation but pays more attention to the harmony and combination of the artificial landscape and the natural scenery, and highlights the ancient Chinese garden concept of 'though it's man made, it looks like Nature's masterpieces'. By using the images like bamboo, old tree, the flower hedge of winter plum, the white goose and purple Mandarin, it is a re-creation to express the master's yearning for the reclusive life. In fact, because of the consistency in emotion, thought and purport between the painter and the master of the painting, the pursuit of the nature and the indifference of mind for fame and wealth embodied in the picture is also the inner portrayal of the painter himself."^[2] Of course, "retro" dominates the overall style of Ming Dynasty art, and the relationship between painting and landscape comes very naturally. Sometimes they two are very close, sometimes far away, but painting and the morphological research of Chinese traditional virtual landscape architecture, including traditional paintings such as ruler painting, and some ancient map, engraving print picture on garden theme are always closely related in the visual expression and reappear.



Figure 1. scroll painting Qiuzhi Garden, the picture of Qian Gu in the Ming Dynasty

Classical works will never fade away over time, and the development of art is not linear, it's rather believed as a concentric circle with inner accumulation by generations. We still do not abandon the "classical landscape era." "We must also carry out historical and cultural research, because the materials we want to investigate come from historical and cultural heritage left by ancestors. Those ideas that have existed and influenced us for several or even decades must have their own reasons, and those charming works must contain excellent design ideas and principles."^[3] Chinese traditional gardens emphasize twists and turns. Both royal gardens and private gardens pursue various shapes and nature charming to create infinite space with limited area for the integration of landscape and nature. Pavilion, corridor, bridge, hall and building and other garden architectures do not follow the over artificial and regular design and layout. Instead, according to different landscape patterns, they integrate the garden with the natural landscape, emphasizing the overall harmony of the garden art. The space construction which advocates tortuous and changeable shapes with unimaginable by

affording wide views in a small confined space is an extension of Taoist Aesthetics. Although dominated by Taoist aesthetics, it also bears Confucian implications. The Taoist aesthetic, upholding simplicity and nature, reposes its human ideal and returns to its own spiritual space through the construction of space environment. Meanwhile, it pays attention to the intrinsic cultural essence, the furnishings, couplets and other structures are all permeated with Confucian's principle of how to conduct oneself in society. What's more, it is also a "strongly rationalistic" landscape design rule that transforms from a conceptual logic to a formal logic. Roger Fry, a famous British art historian, believes that the rationalist tradition in Chinese art and Western art go in the same direction, and both attach great importance to the ability to construct artistic unity, in which the relations among each part is subject to "perceptual logic"^[4]. Moreover, in Fry's opinion, Chinese art has been perfectly combined in the balance of "sensibility and rationality". Only more rigorous artistic expression can move people, which is related to the overall construction of "design logic" of spatial meaning. Wang

Yuanqi, a famous landscape painter in the Qing Dynasty, was unique in the composition of landscape paintings' design. He attached importance to the layout of each part, replacement of opening or closing fluctuation and the relationship between the whole and the part, both attentions are paid on the integrity of the structure and details of the brush and ink. And he also paid close attention to the careful depiction of landscape details. "The *scroll painting South Hill full of Green* (Fig. 2) could be divided into three sections. The first section is a low mountain range with green pines and cypresses. The boat is swaying on the lake with the rising water. In the middle of the painting there is a towering mountain, with houses looming in the mountains and jungles and water

dotting among them. The end is a group of high and steep mountain peaks facing each other across the water, beautiful and vigorous."^[5] The scenery in Wang Yuanqi's brush is luxuriant and novel, with pavilions facing the river, stone bridges crossing the water and the water surface present vast. All fictional natural landscape elements are appropriately placed in the right spatial position, which is in line with the "momentum" form norms of natural scenery. Through the combination of realism and freehand brushwork, every stroke, even focusing on a certain image segment, contributes to the convey of spiritual meaning and the creation of aesthetic significance.



Figure 2. scroll painting South Hill full of Green, the picture of Wang Yuanqi in the Qing Dynasty

3 ENGRAVING ILLUSTRATION, THE SKETCH OF GARDEN CONSTRUCTION GUIDANCE

Serving as the "Garden Atlas", the engraving illustrations of Chinese ancient books have been handed down to the world just as Mr. Lu Xun said, "engraving image on wood and printing it on paper, a method that has been first used in China and then widely spread to the world."^[6] The prosperity and spread of ancient publications cause "secularization of knowledge". In fact, the "garden image" in the illustrations of ancient books in China has formed a set of the most mature and representative "Atlas" of Chinese landscape gardening, which is similar to the "folk secret book" handed down to generations among craftsmen and scattered in various ancient books. Chinese traditional gardening art are rarely recorded in theoretical text writing, *Yuan Ye*, as one of the few ancient gardening monographs written in the Ming Dynasty, focuses more on the literary description of the production method of landscape artistic conception. The essence of the garden art design and construction still relies on the inheritance of masters and apprentices from every operation to the secret teaching of craftsmen. More importantly, "although the structure and art system of Chinese architecture has long been mature, it is rarely seen in the classical text. Most of the authors are scholars rather than craftsmen, thus for thousands of years, this treasure house of the Chinese architecture knowledge has been stored in the hearts of architectural material and craftsmen, ... In particular, the operation technique is rarely seen in writing, only spread and evolved by oral teaching among craftsmen."^[7] There is also a kind of professional "craftsman tradition" in Chinese traditional gardening and engraving printing industry, which does not appear as regular professional training in modern school, but a kind of traditional craftsmanship handed down from master to apprentice who should observe how the master does. This process usually takes several years, and the apprentice must take

careful observation, operation and speculation in order to complete a task. Moreover, the characteristics of image thinking in landscape design determine that the "landscape to be designed" is a display of ideas, a communicator of thoughts, a constructor of meaning, and a speaker of images. If we appreciate the "drawing illustrations" and "engraving illustrations" of traditional Chinese prints from the perspective of craftsmen, the "garden images" of engraving illustrations in ancient books can be regarded as describing the future, a scenario that can happen. Although it is impossible to predict the future, there is still a possibility to describe the future of the world with the image that may happen. This is not a man-made Utopia, but a ready-made planning and design scheme that can be used for reference.

The "garden image" in the engraving illustrations of ancient books in the Ming and Qing Dynasties is a schematic expression of the historical modeling aesthetics of landscape art, which vividly presented past people's artistic ideal and aesthetic pursuit, as well as the new life style of fashion trend in a specific period. Because a certain lifestyle should be reflected by a specific living space, it is necessary to overcome all kinds of contradictions and avoid contradictions by creating space. In addition, how to settle down in nature and how to transform nature in the hands of people form the most basic relation between man and nature. Thus, a "landscape of nature" that human-oriented is simulated, which is an idealized "landscape design schema", even if the "ideal landscape" can never be achieved. The schema is the starting point and core of cognitive structure, or the basis for human beings to understand things. With schema, the subject can react to the stimulation of the object. Landscape art is to comply with the real rational creative habits, and its motivation of design is to build the ideal living state in reality, the "landscape" designed according to the ideal landscape schema. The ancients did not rely on the accurate drawings in modern cartography. "Garden image", as the "sketch" of

landscape construction usually means that the construction size is not accurate, but it can still precisely express the design intention in the landscape schema language, spatial scale diagram and design methodology. The "sketch", on the one hand, makes abstract records on the spatial scale and structural form dimensions of the concrete landscape, on the other hand, as the main design tool for the creation of immersive poetic space artistic conception, it has the direction guidance on the thinking method and logical construction for garden practice. Of course, "painting" is not exactly equal to "sketch" owing to the matching difference between artistic freedom and design reality. In fact, the design and production of "garden image" of engraving illustration in ancient books in the Ming and Qing Dynasties emphasized the accuracy of form, and strives to pursue exquisite image works with a strong sense of reality.

4 DIGITAL PRELIMINARY RESTORATION OF "GARDEN IMAGE" IN ENGRAVING ILLUSTRATIONS OF ANCIENT BOOKS

The consistency of human thinking form in the historical space-time orbit and the continuity of historical development determine that the study of modern landscape architecture must start from the ancient times. When we are trying to "decrypt" the "garden images" in the engraving illustrations of ancient books in Ming and Qing Dynasties, the digital visual operation of computer can serve as "design medium" and "parsing tool". In this paper, the "garden image prototype" of the traditional engraving prints in the Ming and Qing Dynasties was transformed into the visualization construction of computer 3D model for Landscape Visualization. "Visual scene, using modeling and rendering, virtual reality, augmented reality technology and so on, is the clearest way to express planning and design scheme, even non-professionals can understand the intention of planning designer through the scene."^[8] In the article *Research Progress of Digital Landscape Technology-Overview of the Development of*

International Digital Landscape Conference, Liu Song and Zhang Shuwen hold that "landscape visualization is the main application direction of digital technology in landscape architecture. Landscape visualization includes two aspects: 1) visualization technology of data, model and relation; 2) visualization of landscape environment. The original landscape expression of visualization started from two-dimension. The traditional visualization tools include plan, perspective, section, photomontage and physical mode, etc."^[9] The "digital Preliminary Restoration" mentioned in this study focuses on the establishment of digital three-dimensional model of landscape visualization of engraving illustrations of ancient books, and the translation design of classical garden style on this basis. Computer is bound to bring a real revolution to landscape architecture. In the book *Landscape modeling: Digital Techniques for Landscape Visualization* written by American scholars Stephen Ervin and Hope Hasbrouck, digital landscape had been defined as "digital approach of landscape architecture" or "digital (style) landscape construction method". These two definitions imply two potential functions of digital landscape technology as "design tool" and "design methodology", and the digital virtual technology is defined as "3D modeling, immersive display and other image forms".^[10] Based on the earliest and most preliminary modeling method of digital technology (Fig. 3-6), this research aims at the scientific research and design method innovation of "the reconstruction of landscape image's gardening history". It focuses on the image remains in the Ming and Qing Dynasties and carries on the concrete inheritance from it. Through learning from the construction method of its structural space, to create new landscape architecture It starts from the original garden image with the brand of the times and the national art spirit to realize the new life space of the national and modern landscape. Therefore, the translation and interpretation of "landscape image text" has become another new landscape design practices with "generativity", realizing the material connection between design context and gardening tradition (Fig. 7).



Figure 3. The illustration of the new proofreading of *The West Chamber's* ancient edition, Xiangxueju Edition published by Wang Boliang in the 42nd year of Wanli Reign in the Ming Dynasty is restored digitally by sketchup modeling: the authenticity restoration of single building.



Figure 4. The illustration of *Yuan-qu Xuan* compiled by Zang Maoxun in the 44th year of Wanli Reign in the Ming Dynasty is restored digitally by sketchup modeling: imaginative translation design of garden environment

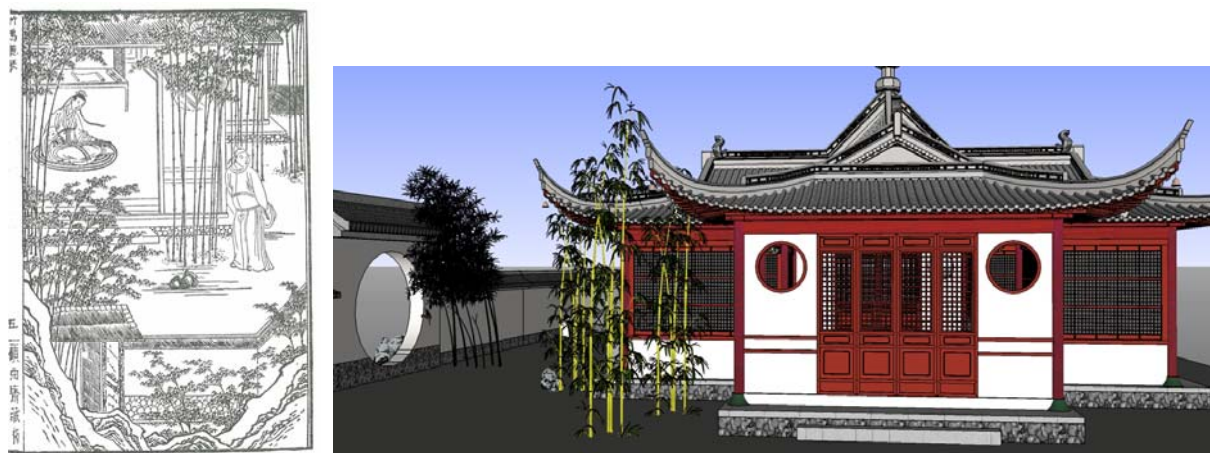


Figure 5. The illustration of *Guquzhai Yuanren Zaju Xuan* published by Gu Quzhai in the 47th year of Wanli Reign in the Ming Dynasty is restored digitally by sketchup modeling: imaginative translation design of garden environment



Figure 6. The illustration of *Yuzhi Yuanmingyuan Tuyong* published by Tianjin Stone printing in the 13th of the Guangxu Reign is restored digitally by sketchup modeling



Figure 7. Digital landscape model of modern urban space virtual regeneration design based on the restoration of "garden image" in the engraving illustrations by Sketchup modeling

The above five cases of "garden image" digital restoration in engraving illustrations of ancient books are not one-to-one corresponding restoration, but a kind of fuzzy and experimental virtual digital model exploration from the aspects of spatial situation, garden elements and construction methods. Since the "design" is closely related to fuzzy thinking such as fuzzy art and mathematics, design philosophy pursues a kind of design methodology, which is fuzzy itself. Fuzzy philosophy produces fuzzy mathematics in elasticity and space, that is, to give a space, an interval, and to give an imagination and elasticity. It only provides methods and problems without giving the only correct answer in mathematics. Liu Dake described it in preface of *Tile Stone of Chinese Ancient Architecture* that "due to cultural limitations, most craftsmen do not dig deeper towards most of the specific sizes but control them by personal feeling".^[11] As a matter of fact, the essence to the "scale" of the traditional Chinese construction thought is "refining on appropriate body", an overall design which is manifested from the form. This semi-industrial manual construction activity, in flexible landscape design strategy, emphasizes the "error control" under the guidance of fuzzy design thinking, which is in line with the judgment by a famous architectural historian Zhu Guangya to China's garden form: the rockery and the lake are all surrounded. Since modern landscape architecture design has become a procedure of abstract expression such as abstract drawing and model, then where is the actual connection between "construction" and "drawing"? The ideal design construction and expression of Chinese traditional landscape often points to the internal relationship between "painting and landscape construction", which is a kind of imaginative concrete thinking, reflecting a constantly active construction activity moving between "ideal landscape design and actual space production". This transformation process, from thought to practice, is to find the possibility and a visual operation tool between idea and construction between idea and material. The construction and expression of the ideal design of Chinese traditional landscape often points to the internal relationship between "painting and landscape construction", which is a kind of concrete imaginative thinking idea, reflecting a construction activity that is constantly sliding between "ideal landscape design and actual space generation". This transformation process from thought to practice requires finding possibility and rationality between concept and construction in order to look for a visual operation tool between mind and matter.

5 CONCLUSION

Digital landscape methods and technologies play an increasingly important role in the landscape architecture history researching, landscape planning and designing and constructing. With the computer science and technology, landscape architecture design has a rational support, especially the landscape scene restoration of landscape historical images can realize visual design operation in simulation, creation, reproduction and other aspects. The historical theory research and the landscape design creation practice of "garden image" based on the engraving illustrations of ancient books in the Ming and Qing Dynasties show uncertainty and polysemy, constantly hovering between "difference and repetition", to trace the history of gardening from the images. By introducing the image intuition into the digital model construction, we can grasp the typical element by a scene, a concept, a behavior or an atmosphere in the "garden image"— in a broad sense, the landscape can be regarded as a kind of "scene" existing in any human environment. To summarize and deduce the representative "Digital Landscape" through the computer technology tool, we do not rely entirely on rational design thinking, but more on our sensory experience and feeling by space openness and design flexibility.

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