
AI translation · View original & related papers at
chinaxiv.org/items/chinaxiv-201704.00171

A Preliminary Discussion on Landsenses Ecology in Chinese Classical Gardens: Postprint

Authors: Zhang Xueling, Yan Rong, Zhao Ming

Date: 2017-04-11T00:00:00+00:00

Abstract

The introduction of “Landsenses Ecology” precisely meets the needs of both people and the times. Its conceptual framework advocates incorporating human perception—encompassing physical senses such as sight, smell, hearing, and touch, as well as psychological experiences—into the study of urban ecological environments. Classical Chinese gardens represent comprehensive ecosystems that integrate elements including water, soil, air, sound, and wind. This paper draws upon classical materials such as garden poetry, couplets, and inscribed plaques, together with practical case studies, to expound upon and examine the application of natural elements, physical perception, and psychological responses in gardens from three perspectives: garden landscape construction, landsenses operation, and ecological aesthetics. In doing so, it reveals the manifestation of Landsenses Ecology concepts within China’s classical gardens and broadens perspectives on the development of contemporary human settlements.

Full Text

A Preliminary Discussion on Landsenses Ecology Thought in Chinese Classical Gardens

Acta Ecologica Sinica (ChinaXiv Partner Journal)

DOI: 10.5846/stxb2016122556

Authors: Zhang Xueling, Yan

Affiliation: College of Landscape Architecture, Beijing Forestry University

Received: December 12, 2016

Corresponding Author Email: zm0940@126.com

The concept of landsenses ecology emerges in response to contemporary societal needs, advocating for the integration of human sensory perception—both

physical (visual, auditory, tactile) and psychological—into urban ecological environment research. Chinese classical gardens represent comprehensive ecosystems integrating water, wind, and other natural elements. This paper draws upon classical garden poetry, historical texts, and actual cases to explore the manifestation of landscape ecology thought in Chinese classical gardens from three perspectives: garden construction, landscape operation, and ecological aesthetics, thereby expanding contemporary perspectives on human settlement construction.

Faced with increasingly severe urban environmental issues, sustainable development of human-environment relationships has remained a widely concerned and discussed topic. As human society develops and progresses, demands for environmental quality enhancement gradually increase, manifesting not only in environmental improvement but also in spiritual solace and enjoyment. The concept of landscape ecology, aimed at sustainable development and based on ecological principles, studies land use planning, construction, and management from perspectives of natural elements and socio-economics [1]. Its core idea integrates human perception—both tactile and psychological—into urban ecological environment research [1-2], providing a new perspective for studying and appreciating Chinese classical gardens.

Chinese classical gardens refer to the Chinese garden system during the agricultural economy-dominated stage of world garden development. Based on site selection and development methods, they can be divided into artificial mountain-water gardens and natural mountain-water gardens. According to ownership, they can be categorized into three mainstream types: imperial gardens, private gardens, and temple gardens, plus non-mainstream types like government office gardens and public gardens [3]. Regardless of type, all gardens maintain an inseparable relationship with mountains and water—what Chinese tradition calls “nature” or “ecology” [4]. Ancient Chinese already possessed profound awareness of sensory perception, as seen in Zuo Si’s Wei-Jin dynasty poem “mountains and waters have clear sounds,” emphasizing mental perception of natural beauty. Other examples include “listening to mournful monkeys by moonlight,” which conveys through hearing and smell the visual scene of misty river surfaces under moonlight, and “evening clouds scattered like silk, clear river tranquil as ribbon,” which uses color differences to convey the movement of clouds and stillness of rivers. As integrated ecosystems, classical gardens enabled ancient designers to perceive scenery through all five senses, achieving the design intention that “why need strings and bamboo when mountains and waters have clear sounds?”

1. Garden Construction

“Look up to observe astronomy, look down to examine geography”—the foremost principle in Chinese classical garden construction. Ancient designers emphasized comprehensive consideration of topography, sunlight, and other natural factors during site selection. The traditional dictum states: “A pond in front is called Vermilion Bird, flowing water on the left is Azure Dragon, a long path on the

right is White Tiger, and hills behind are called Black Tortoise”—these principles align perfectly with ideal ecological living needs by blocking howling north winds. When Zhou clan chief Duke Liu led his people to relocate to Bin, he personally climbed mountains and rivers to determine building orientation and site scope, seeking fertile land with lush vegetation [5]. In his garden treatise *Yuan Ye*, Ming dynasty designer Ji Cheng emphasized that good site selection requires rich geological and landform types, reflecting early ecological environmental awareness [6].

Based on this ecological consciousness, ancient designers also incorporated noise impact into site selection, emphasizing avoidance of bustling urban areas. Without naturally quiet environments, even gardens built in noisy cities strived to create tranquil ecological micro-environments. Suzhou’s Wangshi Garden lies deep in narrow alleys to “avoid official processions.” The renowned Liu Garden, called “the foremost garden among the most prosperous and romantic places outside Suzhou’s Changmen Gate,” has only narrow stone paths connecting it on all sides. Though Suzhou’s Yi Garden is near the “noisy market,” it “blocks western city chatter” to create a “secluded dwelling like a wilderness home.” The Humble Administrator’s Garden, located in Suzhou’s Loumen area, similarly exemplifies this principle.

Mountains and water constitute the backbone of Chinese classical gardens. Water not only provides essential landscape forms but also serves as an important carrier of “spirit.” Bai Juyi emphasized in his renovation of Wuqiao Villa that garden water construction should “channel water according to terrain,” respecting and utilizing natural topography. The Humble Administrator’s Garden, built on low urban land with high groundwater levels, created islands in its central pond by piling earth and stone, planting deciduous trees interspersed with evergreens on the slopes, and reeds at the foot—forming a small water-land composite ecosystem centered on the pond. This follows natural principles to transform lowland ecology into a three-dimensional island environment with richer species and more stable food chains [Figure 1: see original paper]. Ecologically, water bodies help drain and store rainwater, provide irrigation and fire protection, purify air, regulate microclimate, and create habitats for aquatic flora and fauna, enabling harmonious scenes like “fish playing among new lotuses” and “listening to frogs in rice flower fragrance.”

To maintain water quality, garden water often connects to external natural channels through underground ditches. Jichang Garden draws from Huishan’s “Second Best Spring Under Heaven,” Hangzhou’s Guozhuang diverts West Lake water, and Suzhou’s Huanxiu Mountain Villa taps mountain springs. Bai’s records show his old garden diverted Yi River water into the estate. Large water surfaces can self-purify, and aquatic plant communities further enhance purification, achieving ecological balance. This functionally ecological environment provides survival conditions for various water-land organisms .

Plant configuration requires comprehensive consideration of topography, soil composition, and other factors. Willow groves planted by water respect the

species' shade and moisture preferences while accommodating loose, damp soil conditions. Ancient designers respected ancient trees, as “pruning a few branches doesn't harm the canopy” [6], preserving relatively stable ecological niches formed over years of growth. This actually preserves a well-functioning micro-ecosystem. Pine and cypress paired with elm and jujube on high, barren land; bamboo and osmanthus in shady spots; peonies and herbaceous peonies in sunny locations—all demonstrate ecological rationality.

2. Landsenses Operation

Ji Cheng first explicitly proposed in *Yuan Ye* that “borrowing scenery is the most important principle in garden design.” Qing dynasty scholar Li Yu similarly emphasized “obtaining scenery without distance constraints.” Different borrowing methods—varying by viewing distance and experience process—yield different garden scenery [8]. Influenced by the consciousness of four seasons, Chinese classical gardens particularly emphasize seasonal changes' impact on scenery, explicitly or implicitly borrowing spring, summer, autumn, and winter transformations to display seasonal differences. Examples include West Lake' s “Spring Dawn at Su Causeway,” “Remnant Snow on Broken Bridge,” and “Autumn Moon over Calm Lake” ; Beijing' s “Eight Scenic Views” and Guilin' s “Sixteen Scenic Views.” Plant seasonal changes create visual beauty, as in Du Mu' s “stopping to admire maple forest at dusk, frost-covered leaves redder than spring flowers,” using red maple leaves to break winter' s desolation.

Light fundamentally affects garden landscapes. Day and night represent opposing poles, with dusk as transition—day scenes and moon scenes [7]. Emei Mountain' s Qingyin Pavilion, where two streams converge, creates rainbows under sunlight. Su Dongpo' s “Viewing Peach Blossoms on Su Causeway” describes six different peach blossom landscapes under varying times and weather conditions. “Autumn colors entering forests turn red and dim, sunlight passes through emerald bamboos” demonstrates how light creates different visual effects. Gardens concentrating aquatic plants create strong color contrasts, enhancing visual impact, as in Yang Wanli' s “Lotus leaves touch sky with boundless green, lotus flowers shine uniquely red in sun,” which also improves water purification.

Soundscape constitutes unique aesthetic conception. Danish scholar Rasmussen noted that different buildings reflect sound energy to convey different impressions about form and material. Chinese classical gardens extract natural sounds, creating different acoustic landscapes according to settings. Water sounds are particularly valued: “Gurgling stream sounds like zithers” describes Yangzhou' s Jichang Garden' s Eight-Inch Stream, where water collides with mountain rocks to create intermittent, gathering-and-dispersing sounds. Emei Mountain' s Qingyin Pavilion, built at mountain junctions where black and white waters converge, achieves supreme scenic beauty through sound transmitted through deep forests. Chengde Mountain Resort' s “Listening to Rain on Lotus Leaves” and “Listening to Rain on Banana Leaves” create rhythmic natural soundscapes. Wind passing through pine forests creates rustling sounds, as in Chengde' s

“Wind Through Pines” and Suzhou’ s Canglang Pavilion’ s “Bamboo Rhymes Retained by Wind.” Animal sounds fill gardens with ecological wildness, as in Wang Anshi’ s “Cicada noise makes forests seem quieter, bird songs make mountains more secluded.” Gardens also use Buddhist chants and bell sounds to break mountain silence, creating movement within stillness.

Olfactory landscape employs plant fragrances as expression. Ancient people used aromatic plants like mugwort and roses for healing. Gardens utilize plant aromas to create scenery, as in Yuan Mei’ s Sui Garden: “Plum blossoms encircling houses, fragrance becomes a sea.” Suzhou’ s Lion Grove Garden creates multiple scent-based scenes: Double-Fragrance Immortal Hall borrows spring orchid fragrance, Lotus Breeze Pavilion borrows summer lotus scent, and Snow Fragrance Cloud Prestige Pavilion borrows winter plum fragrance. “Plum blossom fragrance within bell sounds, pagoda shadows in pond light” at Tiger Hill creates landscapes integrating sound, scent, and visual elements.

Tactile landscape involves hand, skin, and body perception. People can perceive tangible water bodies, architecture, and intangible elements like breeze. Bai Juyi’ s record of Cold Spring Pavilion states: “I love its tranquil spring water that can dispel troubles.” Night air brushing skin naturally integrates people into garden environments, creating profound artistic conception where “clear air arrives, worldly concerns suddenly distant.”

3. Ecological Aesthetic

Mountains, forests, and springs represent modern people’ s ideal ecological environment. Chinese classical gardens embody this spiritual realm, creating naturally interesting recreational environments that allow “obtaining mountain-water pleasure without leaving the city, gaining forest-spring delight while living in bustling markets.” This reflects ancient people’ s strong landscape sentiment and represents an aesthetic enjoyment object. Garden mountains and waters imitate natural landscapes, achieving the wonderful realm of “perceiving Mount Sumeru in a pot heaven” and “though people say I live in the city, I suspect myself among ten thousand mountains.” This aesthetic manifests not only in mimicking natural landscapes but also in following natural laws to preserve life rhythms, creating complete, harmonious, sustainable ecosystems.

As a special social stratum, scholar-officials (士) became the mainstream of private garden construction. As leaders of elegant culture [3], they endowed gardens with refined temperament. Garden inscriptions and couplets reveal original aesthetic thoughts: “Forest streams have natural interest, rooms with orchids make people pure,” or “Lamp light shines on sleeplessness, pure mind hears wonderful fragrance,” indicating owners’ aspirations for fragrance to cleanse worldly thoughts and enter detached, empty realms. This cultivates a serene, far-reaching, detached mentality.

4. Conclusions and Prospects

Landsenses ecology thought demonstrates how people mobilize eyes, ears, nose, tongue, and mind to perceive nature. As modern foreign scholars have proposed, “a church should not only look like a church but also sound like one” –Chinese classical gardens excel at precisely this, creating environments that integrate four sensory perceptions. This paper draws upon poetry, literature, inscriptions, and actual cases to excavate and elaborate landsenses ecology thought in Chinese classical gardens from garden construction, landsenses operation, and ecological aesthetics perspectives, offering theoretical and practical value for contemporary human settlement construction and ecological sustainable development.

References

- [1] Zhao J Z, Liu X, Dong R C, Shao G F. Landsenses ecology and ecological planning toward sustainable development. *International Journal of Sustainable Development & World Ecology*, 2015, 23(4): 293-297.
- [2] Dong R C, Liu X, Liu M L, Feng Q Y, Su X D, Wu G. Landsenses ecological planning for the Xianghe Segment of China’ s Grand Canal. *International Journal of Sustainable Development & World Ecology*, 2016, 23(4): 298-304.
- [3] Zhou W Q. *History of Chinese Classical Gardens*. Beijing: Tsinghua University Press, 2008: 10-22.
- [4] Wang S Z. *A Preliminary Discussion on Ecological Thought in Chinese Classical Gardens*. Beijing: China Architecture & Building Press, 2014(3): 85-89.
- [5] Zhang J Q. *Chinese Garden Culture*. Shanghai: Shanghai People’s Publishing House, 2005: 155-157.
- [6] Wang X G. *Landscape Gardening Aesthetics of Inscriptions*. Taiyuan: Shanxi People’ s Publishing House, 1993: 175-179.
- [7] Li D G. *Environmental Psychology*. Beijing: China Architecture & Building Press, 2011: 40-53.
- [8] Liu X, Zhao J Z. Reconsidering the concept of landsenses ecology. Beijing: China Building Materials Industry Press, 2006: 1-14.
- [9] Zhang X L. Taking the “borrowing scenery” theme in classical gardens as an example. *Chinese Landscape Architecture*, 2016, (6): 16-23.

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv –Machine translation. Verify with original.