

Psychological Healing through Sensory Perception in Water- and Culture-Centred Spatial Systems of Northern Chinese Gardens

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Abstract:

In this paper, the role of northern Chinese gardens in promoting psychological recovery is analysed through the prism of spatial design, perception and culture. The first section contrasts the Eastern and Western approaches to healing gardens. Meanwhile, the second section analyses the Beijing imperial gardens using the methods of interviews, field observations and the study of water and landforms. The study of the hutong courtyard extends the analysis to fengshui, atmosphere and habitual behaviour. It proves that healing occurs in a sequence, during which space directs the body, sensory experience shifts focus and cultural memory gives emotional meaning to the environment.

Keywords: northern Chinese gardens; sensory perception; psychological restoration; water systems; feng shui

1. Major Traditions and Perspectives in Garden Healing

1.1 Defining Garden Healing

Garden healing refers to the soothing process where humans interact with a designed natural space. This is achieved not only through plants but through other environmental elements such as water, light, sound, climate, movement, privacy, and social interaction. According to a systematic review of studies on garden design for health, restoration is viewed as a complex of certain environmental characteristics that satisfy human physical and mental needs (Harries et al., 2023). In this paper, the term healing is associated

with stress relief, attention restoration, emotion balance, and the state of equilibrium in people's minds.

1.2 Eastern and Western Approaches to Garden Healing

Approaches in Western medicine can be classified into three interconnected approaches:

Clinical healing gardens. These involve integrating nature into the design of hospitals, rehabilitation centres, and care centres. The effectiveness of the design is determined by how much it contributes to the wellness of patients, their families, and medical staff while reflecting the concept of evidence-based health architecture (Zhu and Shah, 2024).

Stress Reduction Theory. According to Ulrich et al.

(1991) non-threatening natural surroundings have a more beneficial effect on the restoration of physical and emotional strength than the urban environment does.

Attention Restoration Theory. Kaplan (1995) explains that the process of restoring attention involves four conditions: being away, coherence, compatibility, and effortless fascination.

Eastern garden healing, particularly in China, is less explicitly implemented in the medical context. Healing takes place in walking, viewing water, listening to natural sounds, reading, drinking tea, and temporarily escaping from social obligations. Evidence from research work in Suzhou gardens suggests that the atmosphere of privacy cum spatial conditions can promote emotional recovery and restoration of attention (Liu et al., 2024). Also, classical Chinese garden scenes have the potential to be restorative due to their peculiar layout (Zhang, Jiang and Zhao, 2024).

1.3 Cultural and Social Causes of East-West Differences

The distinctions between the two systems are not just visual. Western approaches originated in medicine, rehabilitation, environmental psychology and scientific research, making this approach focused on measurable outcomes and users (Zhu and Shah, 2024). Chinese gardens, on the other hand, emerged from imperial governance, residential life, poetry, painting, philosophy and self-cultivation. Confucian order, Daoist naturalness and Buddhist contemplation provided the basis for well-being, suggesting a balance of body, mind, society and nature. Healing in this case was integrated into cultural experience, rather than being treated as a clinical matter (Yu, 2019).

1.4 Northern and Southern Traditions within Chinese Gardens

Northern gardens. They are characterized by imperial patronage, sophisticated water systems, axial planning, monumental architecture as well as broad visuals.

Jiangnan gardens. They are usually smaller and refer to

private and literati lives related to enclosed yards, winding paths, framed views, rocky hills, and concentrated water.

The categories are not absolute: the Qing imperial gardens adapted Jiangnan practices to the conditions of northern topography and political order. Nonetheless, it is shown by space syntax research that imperial gardens and private gardens differ from each other in terms of their different programs, systems of movement, and cultural functions (Yang and Yang, 2022). Such a difference forms a basis for research of the gardens of northern Beijing.

2. A Preliminary Exploration of Beijing Imperial Garden Environments

2.1 Interview with Li Weimin: Urban Structure and Imperial Garden Space

Li Weimin is a distinguished Chinese landscape architect and the founder of Beijing Tuanlin Landscape Architecture Design. Driven by a philosophy of creating "poetic living environments," he seamlessly weaves modern architectural principles with traditional Chinese garden culture to craft serene, human-centered landscape spaces. Interview with Li Weimin, outlines the historic and spatial parameters of the imperial gardens of Beijing. The city, royal authority and garden's construction is one interwoven system. While the ceremonial parts reveal axes, symmetry and hierarchy, the recreational aspects follow water, land and different visions (Li, n.d.). Water plays the key role. The concept of "one pond and three mountains" enabled a quest for immortal islands to endure as a spatial archetype seen in Beihai and in the layout of Kunming Lake. Besides, water also connected hills, bridges, fields, roads and hydraulic improvements in Beijing. The Garden of Harmonious Interest has introduced the small scale of Jiangnan gardens into this monumental northern landscape and paved way for both public rituals and private contemplation.

2.2 Field Investigation at the Summer Palace: Water, Topography and Spatial Experience

Image note: the contemporary photographs below were selected to correspond with the author's field observations. They are published reference photographs rather than the author's own camera records and should be replaced by dated personal photographs where available.

On my field trip, I traveled from the Kunming Lake open area to the formal side of Longevity Hill and went to the western shore and the rear of the water. This experience made me see the same garden-work in several different lights rather than in one global picture. My major finding was that water was the organizing element of both direc-

tion and rhythm: while the lake provided a constant reference point, the buildings, bridges, and vegetation played changing roles.



Figure 1. Contemporary site photographs corresponding to the field route: (a) the frontal monumentality of the Tower of Buddhist Incense; (b) the lower, more accessible water edge at Binfeng Bridge. Sources: xiquinhosilva (2025), CC BY 2.0; Charlie fong (2022), CC BY-SA 4.0. Reference photographs, not taken by the author.

2.2.1 Open water, vertical order and bodily pace

The wide lake gave the impression of distant views, making the Tower of Buddhist Incense look like a fixed landform. I kept looking over the lake and missed smaller architectural details. The bare bank, long reflections and open sky not only made me walk slowly, but they also heightened my sense of the hill's vertical organization. Approaching the buildings on the hill in front of me, the upward path and narrow steps focused my attention on

breathing and bodily balance.

At the Binfeng Bridge and at the western edge of the causeway, I touched water on a very low and accessible level. The bridge presents the short sights through the openings, while the trees, stones, and uneven shore split the lake into small parts. In contrast with the monumental hill at the front, this area feels less precious and more suitable for taking a break. This contrast shows that the lake generates no one uniform experience.

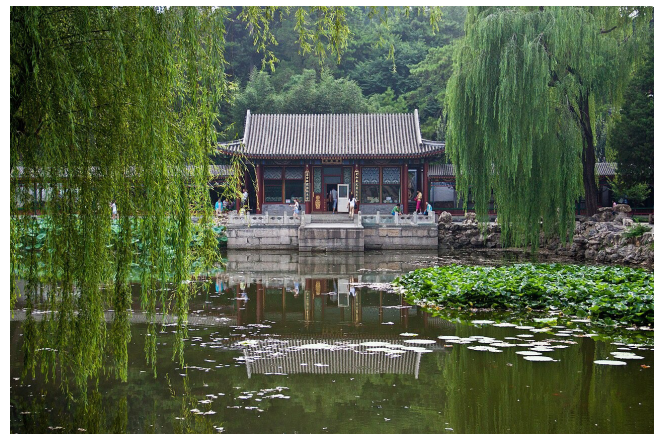


Figure 2. Contemporary reference photographs of smaller northern and eastern water spaces: (a) Suzhou Street and its narrow back-hill channel; (b) the pond-centred Garden of Harmonious Interests. Sources: HoweyYuan (2024), CC BY-SA 4.0; Potanin (2013), CC BY-SA 2.0. Reference photographs, not taken by the author.

2.2.2 Back-hill enclosure and concentrated sensory attention

On the north side, Suzhou Street and the back-hill canals created another rhythm. Buildings grew close to the narrow canal; streets curved around bridges while trees blocked long views. The Garden of Harmonious Interests

was a small space where water, paths, planting, and buildings created an intimate composition. I began noticing shadows, footsteps, movement of water, and reflected exterior walls. This small space offered me gradual release from a great scale and formality of the front hill.

2.2.3 Post-visit research and conclusion

Following the visit, I compared these observations with research on the Summer Palace water system and the “one pond and three mountains” concept. This information confirmed that the water experienced by the observer as part of the scenery was part of a larger hydraulic and cultural system (Yang and Gao, 2019). Hence, the restorative properties of the site are perceived by the observer in a sequential rather than a static way: open water provides a feeling of distance, climbing enhances bodily awareness, while enclosed water bodies bring attention to immediate sound, texture, and movements.

2.3 Reflection: Scale, Sensory Perception and Psychological Healing

The study illustrates the importance of size. Large areas show appearance, distance, and ritual structure, while small gardens give a feeling of closure and emotional proximity. Water, plants, stones, stairs, and passages make people observe, climb, halt, rotate, and slow down. Research of Chinese traditional gardens links such spatial configurations and multisensory perceptions of space to the idea of restoration and wellbeing (Zhang, Jiang and Zhao, 2024; Guo et al., 2025). Therefore, gardens can provide psychological distance from stress through the sequence of physical and sensory processes.

3. Fengshui, Space and Human Behaviour in Beijing Hutongs

3.1 From Reading Notes to the Interview: Fengshui as a Spatial Relationship

Kongjian Yu’s Ideal Landscapes and the Deep Meaning of Fengshui serve as a theoretical background for this

chapter. Yu does not embrace fengshui as supernatural knowledge, nor does he discard it as feudal superstition. He analyzes enclosure, orientation, water, thresholds and protective edges in terms of geography, ecology, and cultural memory (Yu, 2019). Therefore, fengshui can be seen as a cultural model linking qualitative concepts such as safety, hierarchy and belonging with physical circumstances like direction, ratio, visibility and accessibility. Xu (1998) proves the existence of fengshui patterns in Beijing courtyard houses while recent parametric modeling argues some of the orientation and dimensional principles can be transformed into spatial relations without proving their fortune related postulates (Wang, Crompton and Agkathidis, 2026).

The interpretation results in an interview with Zhuang Jingdong. His renewal activities in Caishikou West Area included more than just surface cleaning. He kept historic hutong names and consistent locations while restoring water supply, sewage systems, electricity, and other utilities in a specific way in each household according to the “one courtyard, one policy” technique (Zhuang, n.d). He relates fengshui with construction skills acquired through practice: the construction of the northern building is higher than the construction of the southern building; the width of the courtyard is connected to the height of the building; sunlight in winter should reach the principal room; and entering a room should not lead to a direct way into it. These notions connect the experience of climate conditions with cosmological and social meanings.

3.2 Field Investigation in the Caishikou West Area: Courtyard Climate, Enclosure and Everyday Behaviour

Image note: contemporary photographs are presented first to follow the sequence of the author’s field investigation. Published plans and diagrams are placed afterwards as supporting research material. The photographs are references and should be replaced by the author’s dated field records where available.

Passing through Xizhuan Hutong, I started to notice the contrast in the narrow lane from the inward-facing courtyards. The hutong was confined in movement and sight, while a crooked gate created a turn before the courtyard opened. In the repaired compounds, the centre looked

shared visually, even if different rooms served different purposes. The sunlight reached the pavement and the exterior wall, and the eaves created shaded edges for sitting or short resting.



Figure 3. Contemporary photographs of the Caishikou West Area: (a) an offset entrance sequence in Xizhuan Hutong; (b) a repaired courtyard building with a clearly visible paved edge and drainage grille. Source: Beijing Xicheng Official Release (2026). Reference photographs, not taken by the author.

3.2.1 Enclosure, light and everyday occupation

The field visit disclosed that enclosure was not always easy to adapt to. In confined places, afterward additions reduced the sky view and limited circulation. In comparison, a clearer courtyard made understanding easier, for the social contact was brief but did not infringe privacy.

When it rains, tiled roofing and projecting eaves make the circulation edge rather safe for walking, while falling water, wet ground and cool air increase the sensory presence of this courtyard. The calmness here is based on functioning drains but not on the appearance alone; this point is consistent with Zhuang's description of the refurbishment of pipes, drains, and services (Zhuang, n.d.).



Figure 4. A repaired courtyard in the Caishikou West Area, showing the inward-facing arrangement, open centre, eaves and contemporary reuse. Source: Beijing Xicheng Official Release (2026). Reference photograph, not taken by the author.

3.2.2 Supporting plans and post-visit verification

After my visit, I utilized plans and diagrams to verify my impressions on the site. The official Caixi planning drawing has shown an interesting pattern of small, irregular courtyards, as opposed to the district composed purely of siheyuan-type homes (Beijing Municipal Commission of Planning and Natural Resources, 2021). Thus, the diagram

of siheyuan may be important as a reference model, but not as an exact description of the site. These data along with the analysis of thermal regime of courtyards in Beijing confirm my observation that proportions, solar access, ventilation and visibility of the central space contribute to comfort and behavior of people (Li et al., 2025).

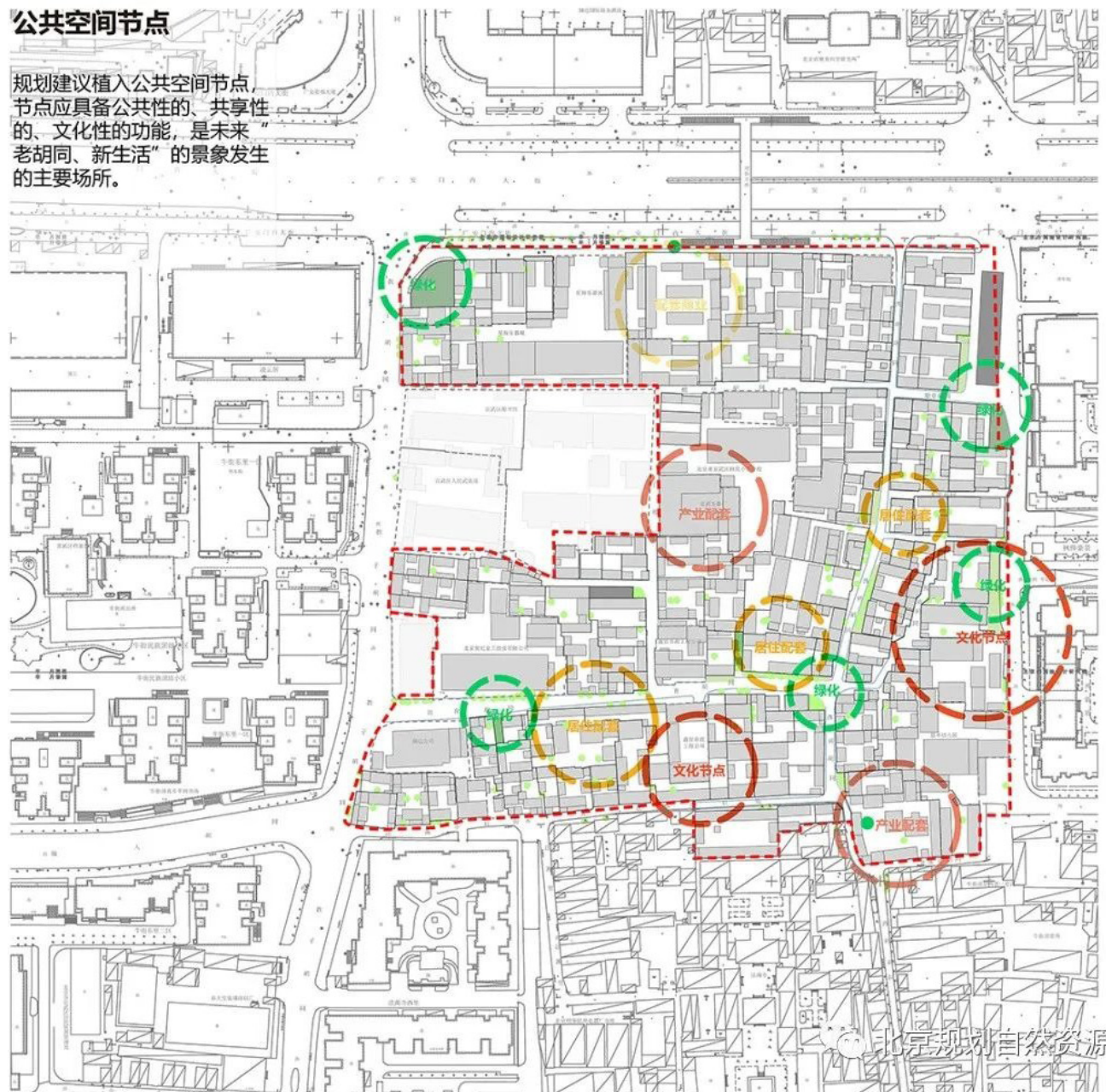


Figure 5. Public-space nodes within the irregular hutong and courtyard fabric of the Caishikou West Area. Source: Beijing Municipal Commission of Planning and Natural Resources (2021). Published planning diagram used after the field visit as supporting evidence.

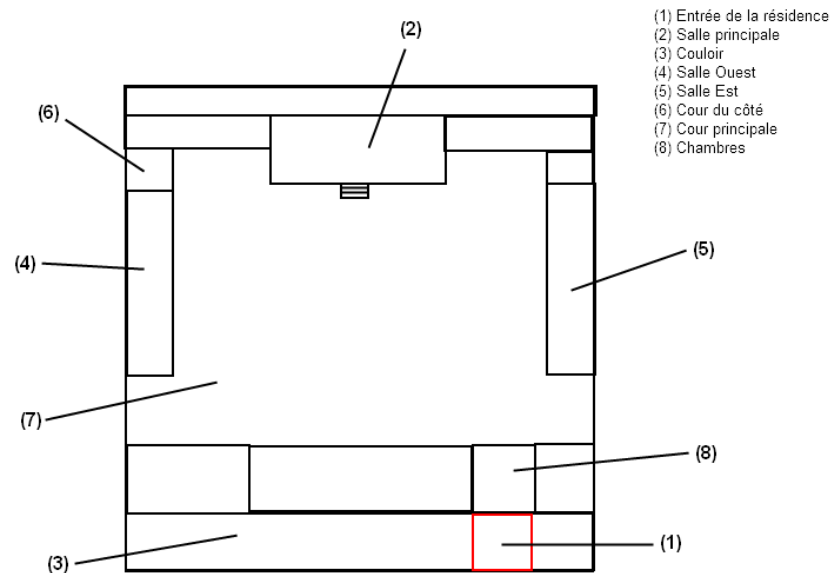


Figure 6. Idealised structural diagram of a standard siheyuan, used only as a comparative typological reference. Source: Thorpe (2015), CC BY-SA 4.0.

3.3 Reflection: From Imperial Landscape to Domestic Courtyard

Imperial gardens and courtyards thus differ in magnitude, but still unite orientation, threshold, enclosure and

movement in their composition. Royal gardens make the elements as part of ceremonial narrative and courtyards turn them into climate regulation, family order, privacy and communication. Fengshui, being a special cultural language, plays a huge role in this.

Cultural rule → spatial structure → sensory condition → behaviour → psychological response

4. Sensory Perception and the Healing Qualities of Northern Chinese Gardens

4.1 From Imperial Gardens to Hutongs: Characteristics of Northern Garden Healing

The previous chapters show the use of water, architectural design, cultural significance, climate, physical motion and behavior for healing purpose in northern Chinese gardens. In the case of the imperial gardens, huge water masses, hills, ceremonial axes, winding paths and enclosed gardens create a smooth transition between grandeur and intimacy, relaxation and tension. In hutong courtyards, the same principles are applied on a domestic level by means of orientation, sunlight, enclosure, drainage, thresholds and a central gathering place. Thus, despite the different political and social purposes these two types of gardens serve, both influence human behavior in terms of walking, stopping, watching, talking and reacting despite the oppositions between open and closed, public and private, distant and intimate.

4.2 Northern Chinese Gardens as Cultural and Multisensory Spaces

In my opinion, the unique healing property of northern Chinese gardens is the ability to awaken the senses and be filled with spirituality and culture. The water is seen through reflections, heard through rain or movement, and felt through humidity and temperature. The sun, shade, plants, tile roofs, stones, paths, and weather are elements of a constantly changing sensory environment.

Spatial sequences, which regulate movement and attention, are responsible for making these experiences. A narrow passageway may serve to heighten the feeling of confinement before leading out to a courtyard or a lake; a steep incline will have an effect of dragging the body down, while a path next to a body of water will be conducive for silent reflection. Poetic names, historical accounts, and principles of fengshui allow one to connect sensory perception to the mind. Thus, healing of the northern Chinese garden is a process in which space regulates the body, the body's experience directs the attention, and culture gives an emotional meaning to the environment.

References

- Beijing Municipal Commission of Planning and Natural Resources (2021) 'Planning interpretation: The "Caixi Model" application-based relocation pilot and organic urban renewal'. Available at: https://ghzrzyw.beijing.gov.cn/zhengwuxinxi/xxzt/wsgshs/2021dyj/d2j/202101/t20210127_2233920.html (Accessed: 26 July 2026).
- Beijing Xicheng Official Release (2026) 'In the depths of Xicheng hutongs, youth finds its café place' [西城区胡同深处，青春正“咖”位], 3 April. Photographs. Available at: <https://xinwen.bjd.com.cn/content/s69cf1741d5ded6a22fa645d.html> (Accessed: 26 July 2026).
- Charlie fong (2022) Binfeng Bridge in Summer Palace 2022. Photograph. CC BY-SA 4.0. Available at: https://commons.wikimedia.org/wiki/File:Binfeng_Bridge_in_Summer_Palace_2022.jpg (Accessed: 26 July 2026).
- HoweyYuan (2024) Suzhou Street in the Summer Palace. Photograph. CC BY-SA 4.0. Available at: [https://commons.wikimedia.org/wiki/File:Suzhou_Street_in_the_Summer_Palace_\(20240706121715\).jpg](https://commons.wikimedia.org/wiki/File:Suzhou_Street_in_the_Summer_Palace_(20240706121715).jpg) (Accessed: 26 July 2026).
- Potanin, N. (2013) Garden of Harmonious Interests. Photograph. CC BY-SA 2.0. Available at: [https://commons.wikimedia.org/wiki/File:Garden_of_Harmonious_Interests_\(9470903941\).jpg](https://commons.wikimedia.org/wiki/File:Garden_of_Harmonious_Interests_(9470903941).jpg) (Accessed: 26 July 2026).
- Thorpe, B. (2015) Schema d'une siheyuan. Diagram. CC BY-SA 4.0. Available at: https://commons.wikimedia.org/wiki/File:Schema_d%27une_siheyuan.png (Accessed: 26 July 2026).
- xiquinhosilva (2025) Summer Palace – Tower of Buddhist Incense. Photograph. CC BY 2.0. Available at: https://commons.wikimedia.org/wiki/File:Summer_Palace_-_Tower_of_Buddhist_Incense.jpg (Accessed: 26 July 2026).
- Guo, L., Gong, X., Li, Y., Zhang, D., Elsadek, M., Yun, J., Ahmad, H., Yao, M. and Li, N. (2025) 'Multisensory health and well-being of Chinese classical gardens: Insights from Humble Administrator's Garden', *Land*, 14(2), article 317. doi: 10.3390/land14020317.
- Harries, B., Chalmin-Pui, L.S., Gatersleben, B., Griffiths, A. and Ratcliffe, E. (2023) 'Designing a wellbeing garden: A systematic review of design recommendations', *Design for Health*, 7(2), pp. 180–201. doi: 10.1080/24735132.2023.2215915.
- Huang, R., Liu, Y., Liang, S., Si, J., Di, S., Cai, M., Hu, S., Hao, C. and Zhao, Z. (2023) 'Social value of urban green space based on visitors' perceptions: The case of the Summer Palace, Beijing, China', *Forests*, 14(11), article 2192. doi: 10.3390/f14112192.
- Kaplan, S. (1995) 'The restorative benefits of nature: Toward an integrative framework', *Journal of Environmental Psychology*, 15(3), pp. 169–182. doi: 10.1016/0272-4944(95)90001-2.
- Li, Y., Wang, C., Zhao, Z., An, J., Shi, Y., Hao, S., Ren, Z. and Zhang, J. (2025) 'Study on thermal environment and energy consumption of typical residential courtyards in Beijing's old city', *Energies*, 18(3), article 626. doi: 10.3390/en18030626.
- Liu, H., Bin, G., Wang, X., Luo, J. and Liu, M. (2024) 'Research on the restorative effects and perception of privacy-driven activities in Chinese classical gardens: Case studies of three Suzhou gardens', *Frontiers in Public Health*, 12, article 1462077. doi: 10.3389/fpubh.2024.1462077.
- Ulrich, R.S., Simons, R.F., Losito, B.D., Fiorito, E., Miles, M.A. and Zelson, M. (1991) 'Stress recovery during exposure to natural and urban environments', *Journal of Environmental Psychology*, 11(3), pp. 201–230. doi: 10.1016/S0272-4944(05)80184-7.
- Wang, Y., Crompton, A. and Agkathidis, A. (2026) 'A parametric approach to investigate the influence of Feng-shui on traditional Chinese courtyard dwelling design', *npj Heritage Science*, 14, article 10. doi: 10.1038/s40494-025-01686-y.
- Xu, P. (1998) "'Feng-shui" models structured traditional Beijing courtyard houses', *Journal of Architectural and Planning Research*, 15(4), pp. 271–282.
- Yang, J. and Gao, Y. (2019) 'Water engineering of Beijing's "Three Hills and Five Gardens" as seen in the Yangshi Lei archives' [从样式雷图档看北京“三山五园”的水利工程], *Zijincheng*, 2019(2), pp. 128–141.
- Yang, S. and Yang, Y. (2022) 'Cultural impacts on traditional Chinese garden design: A configurational comparison between traditional Chinese imperial and private gardens using space syntax', in *Proceedings of the 13th International Space Syntax Symposium*. Bergen: International Space Syntax Symposium, paper 414.
- Yu, K. (2019) *Ideal Landscapes and the Deep Meaning of Feng-shui: Patterns of Biological and Cultural Genes*. Novato, CA: ORO Editions.
- Zhang, Z., Jiang, M. and Zhao, J. (2024) 'The restorative effects of unique green-space design: Comparing the restorative quality of classical Chinese gardens and modern urban parks', *Forests*, 15(9), article 1611. doi: 10.3390/f15091611.
- Zhu, L. and Shah, S.J. (2024) 'History and evolution of the healing gardens: Investigating the building–nature relationship in the healthcare setting', *SSM – Qualitative Research in Health*, 6, article 100450. doi: 10.1016/j.ssmqr.2024.100450.
- Primary sources
- Li, W. (n.d.) Personal interview on Beijing imperial gardens. Interview summary supplied by the author.
- Zhuang, J. (n.d.) Personal interview on hutong renewal, feng shui and courtyard living. Audio transcript supplied by the author.