

Research on the Diagram and Translation of Zhuangzhe Interface Space in Suzhou Classical Gardens

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Abstract: *Against the backdrop where traditional architectural and garden forms have become silenced in modern design, this paper attempts to establish methodological principles of diagrammatic translation. Taking representative Suzhou Classical Gardens as case studies, it deciphers the ever-changing zhuangzhe interface spaces within garden architecture. The analysis focuses on three relational dimensions mediated by zhuangzhe (the transitional space created by garden-specific finish works mediating architecture and scenery): the sheltering relationship between architecture and humans, the harmonious integration of architecture with natural landscapes, and the intricate interplay between dwelling spaces and garden scenery. Through diagrammatic translation methodologies, this research explores a pathway to integrate traditional garden spatial structures and functions with contemporary design philosophies.*

Keywords: *Zhuangzhe Interface Space; Diagram and Translation; Classical Gardens; Modern Design*

1. Introduction

Suzhou Classical Gardens bear profound cultural and historical significance, particularly recognized as pivotal interfaces between "traditional forms" and "modern spaces" during China's architectural modernization ^[1]. However, contemporary architectural and garden design increasingly prioritizes functionality and practicality over traditional formal language, leading to the gradual erosion of historical styles and aesthetics. To address this, scholars have begun investigating the "translation" of traditional architectural vocabulary into effective modern design tools — a process that sustains traditional aesthetics while fulfilling contemporary functional demands.

Existing research predominantly examines classical gardens through cultural or philosophical lenses, particularly focusing on their application in specialized architecture ^[2,3], such as commercial buildings and museums, where scholars pursue the integration of classical garden ideologies and methodologies as fundamental approaches to modernization. Some researchers adopt spatial-structural perspectives ^[4], excavating multi-layered connotations of architectural-garden relationships. Parallel studies employ spatial diagrams to translate mountain-dwelling spatial patterns ^[5-7], akin to zhuangzhe interface elements, by extracting and reinterpreting components like rockeries, terraces, and landforms. These efforts provide contemporary interpretations of classical garden experiences — viewing, wandering, and inhabiting ^[8].

The zhuangzhe interface spaces in Suzhou Classical Gardens offer rich perceptual experiences through their dynamic spatial interfaces and unique layouts. This paper investigates the spatial characteristics of zhuangzhe to uncover embedded cultural codes and design strategies, thereby informing modern design practices.

2. Zhuangzhe in Suzhou Classical Gardens

The term "zhuangzhe" holds distinctive meaning in Chinese garden contexts. Ji Cheng's seminal work *The Craft of Gardens* deliberately employs "zhuangzhe" instead of conventional "zhuangxiu" (interior finish works), emphasizing its divergence from ordinary architectural decoration ^[9]. Here, zhuangzhe primarily orchestrates responsive relationships between architecture and scenery, thereby crafting visually engaging landscapes ^[10]. Beyond mere structural or decorative elements, zhuangzhe

encompasses comprehensive spatial interventions — from roof frameworks to corridor structures and even ground treatments — mediating the transformation from domestic interiors to garden landscapes. Zhuangzhe Interface Spaces exhibit infinite variations in imagery, occupying a unique position in traditional garden art. As a vital garden element, zhuangzhe is frequently applied to architectural structures, covered bridges, and rockeries to enhance the garden's distinctive charm and stylistic refinement. Formally, Zhuangzhe can be interpreted as geometric planes that establish "veiling relationships." Through folding, bending, curving, and petal-like configurations, it creates diverse landscape veiling effects. These are not merely simulations or reproductions of nature but also embodiments of ancient Chinese philosophical thought and aesthetic principles. Hence, the "Zhuangzhe Interface Space" in this study refers to the transitional space created by garden-specific finish works mediating architecture and scenery.

3. Interpreting Translation

The process of translation remains inherently tied to traditional gardening techniques^[11]. Through the integration of diverse research approaches, diagrammatic translation has evolved foundational logical principles particularly suited for analyzing and reconstructing architectural and garden spaces. Analogous to linguistic translation, this process establishes systematic rules to transmute traditional architectural vocabulary into modern expressions, mirroring the combinatorial logic and grammatical structures of "characters-words-sentences-texts" in linguistics (Figure 1)^[12,13]. Such translation endows architectural discourse with a framework akin to the linguistic hierarchy of "character-word-sentence-text".

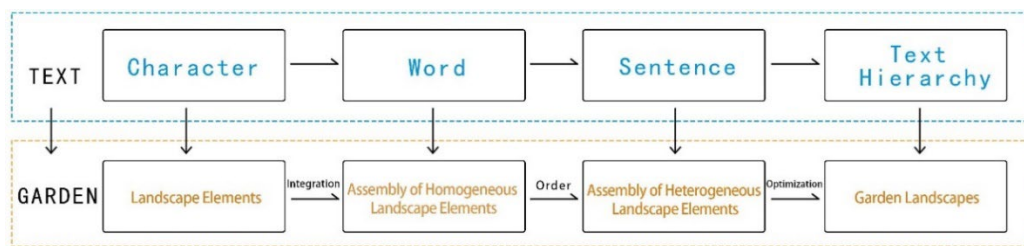


Figure 1: Principles of garden translation methodology.

In this context, "zhuangzhe" functions as the fundamental "character" in garden translation — a discrete landscape element serving as the basis for pattern language translation. Correspondingly, "zhuangzhe Interface Space" operates as the "phrase" within this linguistic metaphor, forming composite spatial expressions.

4. Diagrammatic Translation of Zhuangzhe Interface Space

The essence of translation lies in leveraging zhuangzhe Interface Spaces to orchestrate the intricate interplay between interior and exterior realms, thereby crafting transcendent spatial experiences. By strategically mediating elements such as screens and walls, courtyards and chambers, designers exploit the perceptual affinities between inner and outer spaces rooted in bodily cognition, ultimately constructing labyrinthine spatial wonders that defy conventional boundaries.

Scholars have categorized garden zhuangzhe interfaces into three typologies: how architecture provides bodily shelter, how buildings harmonize with surrounding scenery, and how dwelling-ambulatory relationships manifest in garden spaces^[14]. Building upon this framework, this section further investigates these three spatial relationships through diagrammatic analysis.

4.1 Shelter Relationship Between Architecture and Humans

Zhuangzhe interfaces partition spaces not merely for structural utility but as multi-functional spatial vessels. These interfaces operate as shelters, rest areas, sunshades, rain barriers, or windbreaks. Through field observations in Suzhou Classical Gardens, we analyze and classify shelter relationships mediated by zhuangzhe interfaces (Figure 2):

Shelter relationships manifest in two primary configurations: zhuangzhe as Architectural Envelope: The interface substitutes conventional walls as a bounding or screening element on one side of a building.

Zhuangzhe as Spatial Mediator: The interface itself constitutes corridor-like spaces that articulate boundaries between buildings, courtyards, and circulation paths.

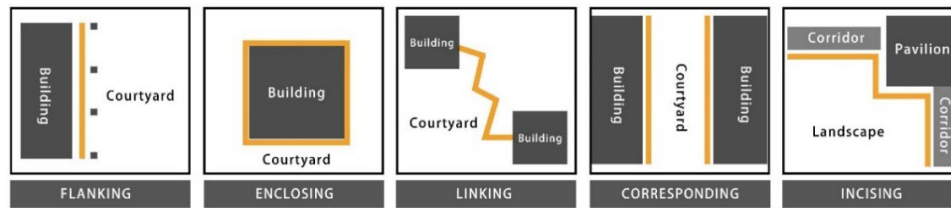


Figure 2: Taxonomy of spatial relationships in zhuangzhe interface spaces.

4.2 Harmony Between Architecture and Natural Landscapes

Framed and Borrowed Scenery: Elements such as doors, windows, corridors, and walls function not merely as spatial dividers but as instruments for view framing and scenery borrowing. Examples include the half-wall lattice screens in Canglang Pavilion's Cuilinglong (Emerald Exquisiteness) and Liuting Pavilion (Listening to Rain Hall) in the Humble Administrator's Garden. These zhuangzhe interfaces strategically incorporate distant landscapes — mountains, waters, and flora — into framed vistas, creating dynamic veiled compositions that enhance spatial aesthetics and artistic resonance (Figure 3).

Spatial Fluidity and Continuity: Through ingenious layouts of zhuangzhe interface spaces, visitors experience a sense of boundless spatial extension and transformation while traversing the gardens. These interfaces dissolve boundaries between interior and exterior, establishing mutual visibility between built and natural spaces, thereby integrating landscapes as inherent components of architectural environments.

Visual Guidance and Layering: zhuangzhe elements such as strategically placed windows and viewing platforms orchestrate visual trajectories, generating richly layered perceptual experiences.

CASE STUDIES	PLAN	SPATIAL DIAGRAM	ON-SITE CONTEXTUALIZATION
HUMBLE ADMINISTRATOR' S GARDEN. Yuanxiang Tang (Hall of Distant Fragrance). Half-Wall Lattice Screens (window framing, view framing, vista alignment).			
CANGLANG PAVILION. Cuilinglong (Emerald Exquisiteness). Half-Wall Lattice Screens (window framing, view framing, vista alignment).			
HUMBLE ADMINISTRATOR' S GARDEN. Liuting Ge (Listening to Rain Pavilion). Half-Wall Lattice Screens (window framing, view framing, vista alignment).			

Figure 3: Vista correspondence in zhuangzhe interfaces.

4.3 Interwoven Relationships Between Dwelling Spaces and Garden Landscapes

Integration of Dwelling and Scenery: Architectural elements like pavilions, terraces, and covered bridges extend outward, serving dual roles as protective shelters and curated viewing platforms. Within these spaces, occupants intimately engage with natural rhythms — seasonal transitions, shifting light, and shadow play — achieving symbiosis with the environment.

Dynamic Spatial Experience: The meandering paths, shifting sightlines, and multi-layered landscapes partitioned by zhuangzhe guide visitors through continuous discoveries. For instance, the interplay between Shilin Xiaoyuan (Stone Forest Courtyard) and Yifeng Xuan (Peak Salutation Pavilion) in the Lingering Garden reveals framed views through perforated walls, transforming each movement into an unfolding scroll painting brimming with serendipitous encounters (Figure 4).

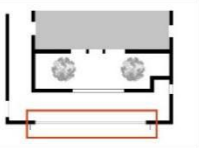
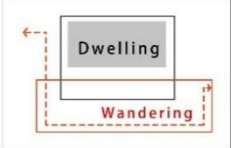

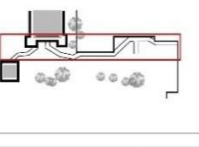
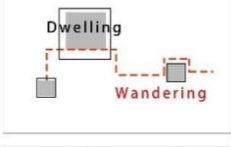

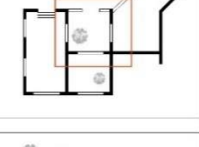


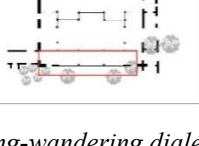
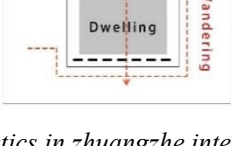

CASE STUDIES	PLAN	SPATIAL DIAGRAM	ON-SITE CONTEXTUALIZATION
MASTER-OF-NETS GARDEN. Zhuwai Yizhi Xuan (Pavilion Beyond Bamboo). Meiren Kao (Seating extensions from buildings to waterscapes).			
HUMBLE ADMINISTRATOR'S GARDEN. Western Waterside Gallery. Zhelang (Folded Corridors).			
LINGERING GARDEN. Shilin Xiaoyuan (Stone Forest Courtyard). Fenestrated Aperture.			
LINGERING GARDEN. Wufeng Xian (Five Peaks Immortal). Walls (Integration).			

Figure 4: Dwelling-wandering dialectics in zhuangzhe interfaces.

5. Conclusions and Discussion

This study systematically deciphers the generative logic and spatial effects of zhuangzhe Interface Spaces in Suzhou Classical Gardens through diagrammatic translation methodologies, revealing their pivotal role in mediating architecture, nature, and humanistic relationships. Key findings include:

Spatial Translation of Multidimensional Relationships: Through five spatial operations — flanking, enclosing, corresponding, linking, and incising — zhuangzhe interfaces transform architectural sheltering needs, natural landscape permeability, and dwelling-wandering behavioral patterns into measurable spatial syntax. This process materializes the trinity experience of "viewing, wandering, and inhabiting" inherent in classical gardens.

Modern Transformation of Cultural Genes: Representative zhuangzhe elements such as half-wall lattice screens and folded corridors demonstrate that traditional garden spatial patterns can be deconstructed into fundamental grammatical units for modern design via the translation pathway of landscape elements → spatial units → systematic order.

Furthermore, the research framework of "zhuangzhe Interface Space → Diagrammatic Translation → Modern Transformation" transcends static interpretations of garden cultural symbols in existing studies. It operationalizes Ji Cheng's gardening philosophy from *The Craft of Gardens* — "ingenious adaptation to context, refined embodiment of appropriateness"^[10] — into actionable design methodologies. The proposed classification system of spatial operations provides new dimensions for typological studies of traditional garden spaces.

In modern practices such as the New Wing of Suzhou Museum, the application of translated zhuangzhe prototypes has shown preliminary success. However, their potential remains underexplored in vertical gardens for high-rise buildings and urban micro-renewal projects. As the material carrier of Traditional Garden DNA, the translational study of zhuangzhe interface spaces not only supplies spatial syntax tools for historic garden conservation but, more significantly, constructs an interdisciplinary bridge transforming traditional craftsmanship wisdom into modern design practices. When exploring the translation and application of Chinese classical garden zhuangzhe artistry in modern design, in-depth analysis of zhuangzhe interface spaces reveals their unique status in classical garden art and their implications for contemporary practice. As technological advancements continue, emerging materials and construction techniques offer novel possibilities for modern interpretations of zhuangzhe artistry. Future research should investigate how advanced technologies can enhance the expressive power and functionality of zhuangzhe spaces while preserving their ecological and cultural essence.

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