

Article

The Engawa as Spatial Mediator: Transformation of Design Mechanisms in Japanese Teahouses

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Abstract

The *engawa*, a threshold space in traditional Japanese architecture, has been widely cited as the archetypal manifestation of Kurokawa's grey space theory. However, prevailing interpretations treat it as a static prototype, overlooking the transformation of its spatial mechanisms across history. The present study addresses this lacuna through a comparative case analysis of three representative teahouses. The following three styles are examined in this study: the sixteenth-century *sōan* style, the early seventeenth-century *samurai* style, and the early seventeenth-century *shoin-zukuri* style. The evolution of the *engawa*'s mediating function is traced through these three styles. An analytical framework comprising five dimensions—boundary permeability, sequential flow, material tactility, integration of natural elements, and visual transparency—is applied consistently across all cases. The analysis demonstrates a discernible evolutionary trajectory, commencing with an inwardly contracting spiritual threshold in *Myōki-an*, progressing to an outwardly differentiating social interface in *ma*, and culminating in a meticulously crafted aesthetic artefact in *Mittan*. The present findings demonstrate that the *engawa* is not a fixed spatial prototype but rather a dynamic mediator whose form adapts to shifting social, cultural, and spiritual demands. The study posits that the essence of intermediary space does not lie in any specific configuration, but rather in its capacity to mediate between opposing realms, including self and nature, individual and society, and function and beauty. This reinterpretation provides a theoretical foundation for contemporary architectural practice, proposing that designers should prioritize diagnosing the relational challenges that intermediary spaces are designed to address, as opposed to merely imitating historical forms.

Keywords: tea house; grey space; architectural history; *engawa*; space experience



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1. Introduction

In architectural discourse, “transitional space,” “grey space,” and “*engawa*” are often referred to as distinct concepts. Transitional space is a space between the outdoor and the indoor [1]. The concept of grey space was first proposed by Japanese architect Kisho Kurokawa in the 1980s; it refers to transitional space and is a kind of in-between concept. The in-between concept originates from the classification of public and private spaces in urban planning [2]. The *engawa* space originates from traditional Japanese architecture as an intermediary corridor connecting indoor and outdoor areas [3]. Kishō Kurokawa asserted: “The city has lost its most perfect transitional spaces” [4]. To restore such spaces within the urban environment, he drew upon the concept of “*engawa*” from traditional

Japanese culture, aiming to mitigate the emotional alienation caused by the fragmentation of modern urban spaces [5]. This formed the basis of his systematic theory of “intermediary spaces,” which resonates deeply with traditional Japanese spatial philosophies such as *ma* and *oku*.

The term “*ma*” is employed not only in the context of physical distance in architecture, but also to denote a philosophical concept of separation and negative space, thereby representing dynamism and change. As Guitart observes, the architectural filter operates as “a permeable segment of the line that limits an enclosure, a part that not only separates but joins inside and out. Yet, when it works the way it should, when it filters, each is effectively a spatial interposition. More than that, as it functions, it communicates separations and connections between ambient conditions and localized enclosures.” This mediating condition—where separation simultaneously enables connection—lies at the heart of *ma*, structuring the calibrated intervals that define boundary permeability and the rhythmic pauses that shape sequential flow [6]. The concept of “*oku*” is predicated on the notion of depth and mystery, serving as a symbol representing an unreachable centre in space that incites human pursuit and yearning. Analyzing Matisse’s window paintings, Guitart notes that “one can distinguish distinct layers in the depth of a space we tend to think of as marginal. There are elements of the pictorial composition that consolidate the situation, articulating its depth.” This layered articulation directly informs *oku*’s operation: through successive thresholds and selective framing, space is progressively revealed, drawing the viewer inward—a principle that governs both sequential flow and visual transparency [6].

The term “grey space,” coined by Kurokawa, draws inspiration from the “*Rikyū Grey*” philosophy of tea master Sen no Rikyū—a shade achieved by blending multiple colors to harmonize with the surroundings [7]. For Kurokawa, “grey” signifies not a color but a conceptual state: the intermediary zone that mediates between binary opposites such as interior/exterior, public/private, and nature/artifice [8]. Defined by fixed architectural elements such as floor levels, cantilevered roofs, and column-beam structures, grey space transcends the confines of private domains, forming inherent transitional areas within the building fabric.

In the aftermath of Kurokawa’s seminal proposal, the *engawa* has been extensively cited as the archetypal manifestation of grey space. Nevertheless, prevailing academic interpretations of the *engawa* remain largely static and idealized, treating it as a timeless archetype. This perspective overlooks a critical fact: the *engawa*’s spatial form and social function have undergone significant transformation across history. From the introspective threshold of the 16th-century *sōan* teahouse to the hierarchical waiting space of the *samurai* tearoom and the meticulously crafted aesthetic of the *shoin-zukuri* style, the *engawa* evolved in response to shifting social, cultural, and technological contexts. Yet no study to date has systematically analyzed these historical variations or asked what they reveal about the very nature of intermediary space.

This study aims to address this gap by examining the *engawa* spaces in three representative Japanese teahouses from different historical periods: Myōki-an (16th century), Ennan (17th century), and Mittan (17th century). Focusing on their design methodologies, spatial compositions, and experiential mechanisms, the study seeks to answer two questions: (1) How did the spatial mechanisms of the *engawa* evolve across these periods? (2) What does this evolutionary trajectory reveal about the essence of intermediary space? By revealing the *engawa* not as a fixed prototype but as a dynamic mediator, the study offers a conceptual framework for contemporary architecture to rethink the design of spaces that genuinely mediate between people and their environments.

2. Literature Review

2.1. *The Plural Paradigms of the Grey Space*

In the East, grey space theory can be traced back to the Spring and Autumn Period and the Warring States Period in China (770–221 BC) [2]. From an initial single dichotomy, it gradually explored the diversity of in-betweens over the course of historical evolution and moved towards the blurring and enrichment of grey. In the mid-18th century, when Giambattista Nolli drew the “Pianta Grande di Roma”, he not only enriched the map but also opened the closed nature of the figure–ground, that is, leaving public indoor areas blank and making the inner and outer spaces of the city interpenetrate and blur with each other [9]. In 1889, Camillo Sitte used void and solid methods of depicting public spaces in his study of urban morphology in “The Art of Building Cities” [10]. These studies became popular again in the 1960s with the figure–ground mapping technique. The fundamental nature of grey space is predicated on its role as an intermediary zone, functioning as a transitional space between interior and exterior environments. This grey space, embedded within the fabric of the building, transcends the confines of private domains, forming inherent transitional areas actively defined by fixed architectural elements such as floor levels, cantilevered roofs, and column-beam structures. This subtle space can regulate people’s moods, providing space for personal reflection and facilitating communication.

Research on the Application of “Grey Spaces” in Modern Public Architecture. Studies on spatial theory are relatively common in Japan. Their research perspective focuses on functional dimensions, including the comfort of “grey spaces,” the social utility of space, spatial privacy, and the creation of well-defined spatial boundaries and forms. Richard Austin, in his book *Planting Design Elements*, provides comprehensive guidance on botanical landscape design for architectural “grey spaces.” The book details every operational step from pre-planting planning and preliminary design to final execution. This enables designers to strike a balance between technical considerations—such as regional vegetation requirements, soil grades, climate, noise, and soil erosion control—and aesthetic factors including color, form, and seasonal variation [11]. In *Contemporary European Gardens*, Udo Wirth notes that the appeal and value of modern architectural spaces lie in their focus on the designed environment, responding with confident, holistic solutions. Modern architectural spaces are more than the sum of their parts. Thus, whether these elements are arrangements of trees, pyramids of grass, interwoven structures, or artistic layouts, grey spaces can still yield vibrant and dynamic design solutions [12]. In his 2011 publication *The Urban Revolution: From Public to Shared*, Kisho Kurokawa elaborates on the intermediate realm and public sphere that bridge dualism toward symbiosis [13]. Japanese architect Tadao Ando also elaborates on “grey space.” In his 1999 proposal for the Reina Sofia Museum international design competition, he emphasized that architecture must transcend the singularity of the building itself, integrating into the urban body and allowing the city’s space to permeate the building’s interior [14]. In South Asia, Sri Lankan architect Geoffrey Bawa described his built environments as “gardens within larger gardens”. In America, the landscape architect Richard L. Austin elaborated on design methodologies for architectural “grey space” from a landscape design perspective. In Western countries, colonnades appear in modern architecture as open spatial forms, flexible layouts, and richly symbolic elements. They are particularly common components in shaping urban public activity environments and cultural or commemorative sites. Beyond architecture and urban planning, the concept of “grey space” is also studied and applied in other design disciplines. As shown in Table 1.

Table 1. Comparative analysis of grey space theories and applications across regions and disciplines.

Region/Field	Key Figure/Work	Core Concept/Research Focus	Design Characteristics
Japanese School	Kisho Kurokawa “The Urban Revolution: From Public to Shared”	Intermediate Realm & Symbiosis: The emphasis is placed on the intermediate area connecting dualisms and the public sphere, with a gradual transition towards symbiosis.	Emphasizes theoretical depth and spatial permeability, weakening defined boundaries.
	Tadao Ando	Urban Permeability: The integration of architecture into the urban fabric is of paramount importance, allowing the permeation of urban space into the building interior.	Creates spatial flow and dialogue between the building interior and the external urban space.
Europe & West	Udo Weilacher	The concept of Holistic Design is outlined as follows: The appeal of modern architectural space lies in its holistic response to the environment; the space is greater than the sum of its parts.	Emphasizes integrity, creating vibrant and comprehensive solutions.
	Western Modern Architecture	Application of Colonnades: Serves as an open spatial form, flexible layout, and symbolically rich element.	Functions as an open, flexible, and symbolically significant public spatial element.
South Asia	Geoffrey Bawa	“Garden in the Garden”: Views the built environment as a garden nested within a larger natural landscape.	Deep nesting and integration of architecture with the natural environment.
Landscape Architecture	Richard L. Austin	Balance of Technology and Aesthetics: Provides comprehensive guidance on botanical landscape design for architectural grey space.	Provides a systematic design methodology for planting landscapes that balances technical and aesthetic considerations.
Eastern ancient architecture	Tang Dynasty “Lifang System”	Lanes within blocks	Spontaneous formation of multi-level, semi-public/semi-private transitional

In this context, the porch serves as a classic example of such a “grey” or liminal space. As recorded in the Concise Encyclopedia Britannica, a porch is a “roofed structure, usually open at the front and sides, projecting from the front door of a house, and used to protect an entrance,” presenting an integrated view of the private sphere of the house and the public exterior. This structure highlights the porch as a liminal space where the private–public dichotomy remains crucial, with ‘private’ encompassing the familial, individual, and local, and ‘public’ representing the other, collective, and global. Hence, the in-between threshold (doorstep) is a space of informal relationships, mediating between the dwelling and the street, whose indefinite limits constitute the third element between the inside and the outside, between the individual and the collective realm.

Grey space focuses on the “intermediate realm” articulated by Kisho Kurokawa, situated between binary oppositions such as interior/exterior and public/private. It is not an absolute spatial category, but rather a “transitional” and “connective” role achieved through architectural design elements such as openings, grilles, colonnades, and eaves

spaces. Its essence lies in softening and blurring distinct boundaries to facilitate interaction and regulate emotional experiences.

In this study, boundaries are defined as the physical interface elements that constitute and partition space, primarily comprising walls, doors, windows, floors, and roofs. To comprehend grey space, it is imperative to undertake a thorough analysis of the properties inherent to these elements.

Transitional space is defined as the dynamic process occurring within grey space (for example, a veranda), guided by spatial sequences. This process encompasses the physical movement along a path from the exterior (roofed terrace) into the interior (tearoom), alongside the accompanying shift in psychological perception.

The concepts of enclosure and permeability are pivotal in this regard, as they denote the degree of spatial containment and openness, respectively. The concept of enclosure is realized through the integration of structural elements such as roofs, walls, and columns, thereby creating a sense of containment and territoriality. In contrast, the concept of permeability is achieved through the incorporation of openings, transparency, and operability in interface elements, particularly doors and windows. This facilitates the circulation of sightlines, light, and air, as well as visual connections between spaces.

Across these diverse cultural interpretations—from Norelli’s blurring of form and context to Bawa’s “garden within a garden,” from Western colonnades to Kurokawa’s philosophy of symbiosis—the gray space consistently functions as a mediating device, dissolving dichotomies and enriching spatial experience. However, these grand paradigms, while inspiring, remain confined to abstract theory. In order to comprehend the nuanced characteristics of the grey scale, one must first explore its cultural origins, which can be traced back to the Japanese tea room. Within these intimate structures, the function of grey space is to serve as a buffer zone between the mundane world and the tea ceremony ritual. The Japanese term “*engawa*” is used to denote this transitional zone, where philosophical concepts such as “*ma*” (interval) and “*oku*” (depth) translate into architectural experience. The ensuing sections transition from global discourses on grey space to its distinctive embodiment within Japanese culture, meticulously tracing the evolution of *engawa* from rudimentary verandas to sophisticated spatial elements within the tea ceremony tradition.

2.2. The Origins of Japan’s Grey Space Culture

Influenced by the Tang Dynasty in China, coupled with Japan’s small area and disaster-prone environment, and by religion [15], Japan has produced two main cultural concepts that have shaped the characteristics of Japanese space. “*kami*” is the Japanese belief that everything in the world is a god. “*himorogi*,” which was born from this, also became a concept in Japanese space—just by wrapping a circle of hemp rope around evergreen plants as pillars and adding paper hangings, a space is enclosed [15]. Therefore, unlike primitive huts in the West that were tightly wrapped on all sides, the space of “*himorogi*” does not have very clear boundaries and functional implications. On the other hand, the fundamental spirit of the Japanese is “*oku*”—a mystery composed of psychological depth and sensory layers [16]. It is manifested in Japanese space as creases of multi-layered space and time, with emphasis on the process being felt through multiple senses [17,18]. “*oku*” involves the ambiguity of the center, while “*ma*” involves the ambiguity of the boundary, emphasizing the gap between entities, which is an uncertain in-between grey with ambiguous relationships. Therefore, Japanese space tends to feature de-barrierization while pursuing the multi-layered depth and fluidity of space [19].

The concept of “Grey Space” was developed in the late 1960s by Japanese architect Kisho Kurokawa. Just as grey is a transition between black and white, architectural ‘grey space’ serves as a transitional zone between enclosed spaces and *Roji* (gardens), or between

areas with different functions. To materialize this concept, Kurokawa employed a variety of elements, including grids, colonnades, and porches. He identified the ‘*engawa*’ (*engawa*) as a quintessential example. The *engawa* is a typical grey space because it is not separate from, nor independent of, the inside or outside. It functions as a medium between the two—a space that is partly indoors and partly outdoors, partly closed and partly open, partly private and partly public. Grey Space represents the plurality of Japanese culture through the fusion of contradictory elements.

This spatial form had been used extensively in traditional architecture, such as the *engawa* of a traditional Japanese teahouse, before the concept of grey space was developed. The *engawa* or *en* is an edging strip of non-*tatami*-matted flooring in Japanese architecture, usually wood or bamboo. The *en* may run around the rooms, on the outside of the building, in which case they resemble a porch or sunroom. The area under an *engawa* is sloped away from the building, and often paved, to carry water away. The area directly outside the paving is usually a collector drain that takes water still further away. The *engawa* is thus a way to bridge the obstacles good drainage puts between the indoors and the outdoors. This is shown in Figure 1.



Figure 1. Adolfo Farsari. A peripheral transitional space featuring non-*tatami* flooring that mediates between the interior and exterior, while serving as both a circulation path and a drainage interface.

This is exemplified by traditional Japanese architecture, such as the House of the Number, where the three dimensions of the building are reduced to two, with a focus on the various two-dimensional planes of the building. These are expressed as flat, pictorial, spiritual, multivalent, and even contradictory and ambiguous spatial forms [20].

In Japanese architecture, the *engawa* is a common type of protruding space, also known as an ‘under-roof space’. The *engawa* is the strip of a non-*tatami* floor, typically made of wood or bamboo. Located outside the room or building, it is similar to a porch or balcony. Typically, the *engawa* is positioned outside the translucent paper *shoji* and inside the *amado*. A *hisashi* is typically found around the exterior of a *tatami*-floored room or an *engawa* without a mat, such as a *hirobisashi*. *Engawa* spaces are often designed so that people can sit on them and observe the garden. They provide a space for children and leisure visitors. This paper focuses on the *engawa* space of the traditional Japanese teahouse (gable, including porch, doors, and windows), as seen in Figure 2.

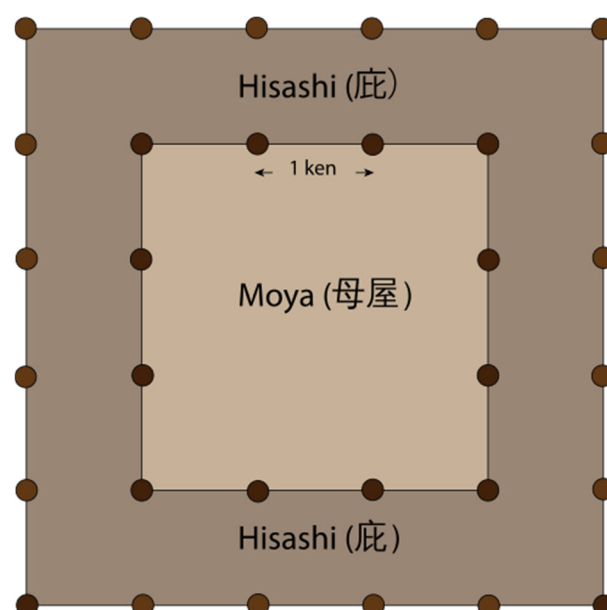


Figure 2. *Moya* and *Hisashi*. A schematic diagram illustrating the core spatial relationship in traditional Japanese architecture, where the *moya* (main central space) is extended by the *Hisashi* (surrounding eave-covered area), forming the characteristic *engawa* (veranda) as a transitional grey space.

Professor Hillier has introduced the concept of spatial ‘asymmetry’. This ‘asymmetry’ of space suggests that the properties of a space depend on its relationship to other spaces, and that the relationship becomes complex and variable due to the inclusion of intermediary spaces. This ‘asymmetrical’ relationship demonstrates that grey space is both dependent on and closely linked to the other two types of space. This form is represented in traditional Japanese teahouse architecture by *engawa*, which is defined as the space located beneath the eaves.

In 2015, Kisho Kurokawa delivered a speech in which he discussed the transition from the “age of mechanics” to the “age of life”, in which he promoted the theories of symbiotic thought, which posits that the concept of ‘symbiosis’ is an apt descriptor for the essence of Japanese culture. The pivotal element in Kisho Kurokawa’s approach to modernity and tradition in architecture is the symbiosis, or combination, of these two concepts. Kisho Kurokawa’s approach to architecture is characterized by a commitment to integrating tradition across multiple levels and employing diverse methodologies to create architecture that is both meaningful and contextual. This commitment is exemplified in Table 2.

Table 2. Kisho Kurokawa’s design approach.

Concept	Theory	Practical Implementation
Approach 1	The integration of conventional exterior forms with the application of novel techniques and materials has resulted in a transformation of its aesthetic.	In the context of modern architecture, traditional elements such as roof forms, deep eaves, latticework, and <i>engawa</i> continue to be employed with the intention of achieving a harmonious effect with traditional architecture.
Approach 2	The conventional exterior forms of the edifice are recombined and integrated into the design concept of ‘symbiosis’.	The elements of traditional architecture comprise such features as hallways, windows, and doorways. In the context of modern architecture, symbols are configured to convey multiple values and meanings, thereby infusing historical forms with new significance.

Table 2. Cont.

Concept	Theory	Practical Implementation
Approach 3	This contemporary architectural form, material, and technology are indicative of Japan's distinguished traditional cultural connotations and aesthetic interests.	The integration of abstract geometric forms with philosophical and aesthetic ideas results in the creation of flat, pictorial, spiritual, as well as multivalent, contradictory, and ambiguous spaces. The incorporation of geometric forms introduces abnormal distortions and continuities, which are then used to disrupt the symmetry of the forms, thereby endowing them with a paradoxical and multivalent connotation.

3. Methods and Materials

3.1. Research Approach

The present study employs a qualitative research design, combining a case study with comparative analysis. The utilization of case study methodology is deemed appropriate for the investigation of complex spatial phenomena, wherein multiple variables intersect, and contextual understanding is imperative [21,22]. A comparative analysis across cases enables the identification of patterns and variations, providing a basis for theoretical insight [23].

The data collection process encompassed a variety of sources to ensure the validity and reliability of the study [22]. The sources utilized for this study encompassed a diverse array of materials, including historical architectural drawings, academic monographs that focused on the historical development of Japanese teahouses, records of tea ceremony lineage, and contemporary photographic documentation. The triangulation of evidence supports the reconstruction of spatial configurations and design intentions.

The analytical framework utilizes a five-dimensional model derived from Kurokawa's grey space theory and traditional Japanese spatial concepts (*ma* and *oku*): The following factors must be given due consideration: The following factors must be considered: (1) boundary permeability, (2) sequential flow, (3) material tactility, (4) integration of natural elements, and (5) visual transparency. Each case is analyzed through the following three dimensions, with a focus on three aspects: firstly, design methodology (the designer's spatial strategies), see Table 3; secondly, spatial composition (how mechanisms are configured); and thirdly, experiential mechanism (how space guides perception). Cross-case synthesis is then employed to identify patterns of continuity and change.

This study defines grey space as an intermediary zone that connects yet separates distinct domains (e.g., interior/exterior, public/private) through deliberate spatial interventions—such as interface recesses, material gradations, and visual permeability—thereby establishing both physical and psychological links between contrasting realms.

To elucidate how the *engawa* functions as a paradigmatic grey space and to distill transferable design principles, the research addresses two sequential questions. Mechanism question: How does the *engawa* in traditional teahouses fulfill its transitional, connective, and adaptive roles through spatial composition, design techniques, and experiential mechanisms? Translation question: How can these operative mechanisms be distilled into universally applicable design principles for contemporary architecture?

The data analysis proceeds in two integrated phases. First, an examination of individual cases applies this framework uniformly to three historical tea houses (Myōki-an, Ennan, and Mittan). To ensure transparency and reproducibility, this study followed a structured analytical process encompassing spatial drawing reconstruction and the systematic application of a five-dimensional framework. Addressing the scarcity of original

architectural documentation for the three historic tea houses, the principal investigator collected publicly available images, historical photographs, and literature. The floor plans were then redrawn using Auto CAD2025. In instances where pertinent details were absent, researchers resorted to inferential reconstruction. This reconstruction was undertaken by standardizing the scale and orientation, cross-referencing multiple sources, and consulting published descriptions of tea house spaces. While this approach facilitated consistency in graphic style across cases, its reliance on visual interpretation imposed limitations on the independent verifiability of research findings. It is evident that, in order to guarantee the systematic implementation and transparency of the five-dimensional analytical framework, two researchers have operationally defined each dimension based on literature sources. They conducted independent analyses of the three tea house cases, focusing on key indicators such as door, window, and wall types and locations; path rhythms; material textures; integration of light, shadow, and vegetation; and visual hierarchy, describing how each indicator manifests in their specific design.

Table 3. The five analytical dimensions of case studies.

Category	Analytical Dimension	Analytical Direction	Source of Literature
A. Space Composition	1. Boundary permeability	Spatial interfaces: walls, doors, windows, and flooring. The degree to which interior and exterior spaces are physically and visually separated or connected.	boundaries are represented in both physical and social structures, but are equally represented and recognised in their ambiguity, permeability, symbolic strength, and possible symbolic transformation [24]
	2. Fluid Sequence	The path, rhythm, and ritualized sequence of actions experienced by users as they transition from the exterior to the interior—examined through how “ <i>ma</i> ” structures the pace and pauses of the journey, and how “ <i>oku</i> ” is gradually revealed through layered spatial composition, drawing the user toward an implied or hidden core.	During the moments where the guests are alone and examining the room, as it may happen in the frame of quite formal chaji tea ceremonies, the path they are walking on goes successively through these three areas, passing over determinate points at the crossing of the borders of some <i>tatami</i> mats.
B. Design Method	3. Material tactile transitions	The variation in material texture and temperature throughout the space guides tactile experiences and spatial cognition.	The space mainly comprises five types of perceptual dimensions. The five perceptual dimensions are the percepts of fine roughness, coarse roughness, softness, warmth, and friction [25].
	4. Integration of natural elements	The manner and intensity with which natural elements such as light, shadow, and greenery are integrated into the <i>engawa</i> space	It seems then possible to follow the hypotheses that natural elements have been introduced in the universe of tea with the aristocratic elements concerning gardens and dwellings into the culture of the new chanoyu tea way shared with the <i>samurai</i> class.
C. Experience Mechanism	5. Visual transparency	The layering and directionality of sightlines through grey space, and their impact on psychological perception	Traditional Japanese architecture has created spaces that can fully respond to their environment, adapting and changing as needed. These spaces also express a mastery of the control of light, views, and boundaries [26].

Second, a dimensional comparative analysis contrasts the cases across these five indicators. This controlled comparison aims to reveal the evolutionary trajectory of the *engawa*—from a space for personal introspection, to a vessel for social order, and finally to a fusion of craftsmanship and artistic conception—and to extract underlying design logic from this progression.

The concluding phase synthesizes these analytical findings to uncover the core design logic of traditional tea-house grey spaces. This synthesis yields design principles and multifaceted values (spanning layout, materials, and aesthetics) that offer practical guidance for contemporary transitional space design, providing a modern application of time-honored principles.

3.2. Case Selection and Data Collection

In traditional Japanese architecture, *engawa* manifests in a variety of forms, including but not limited to residences, temples, palaces, and teahouses. Nevertheless, the *engawa* of teahouses is of unique value, see Table 4.

Table 4. *Engawa* in differing architectural typologies.

Building Type	Function of <i>Engawa</i>	Research Value
Residential	Daily living, household chores, and family socializing	Mixed functions; intermediary role diluted by everyday use
Temple	Monastic practice, devotee worship	Highly ritualistic, but users have singular roles
Palace	Noble etiquette, display of power	Reinforces hierarchical order; spatial freedom is restricted
Teahouse	Complete vessel for tea ceremony rituals	Pure function, intact ritual, complex relationships

Over the course of the 16th and 17th centuries, Japanese teahouses underwent a comprehensive evolution, progressing from thatched-roof tea huts to *samurai* teahouses and ultimately to teahouses in the *shoin-zukuri* style. This evolution has been meticulously documented, and three fundamentally distinct forms of the *engawa* as an intermediary space have been identified: an inward-turning spiritual interface, an outward-differentiating social interface, and an exquisitely crafted artistic interface.

3.2.1. Traditional Japanese Tea Culture and Tea Ceremony Ideology

The traditional Japanese teahouse (Chashitsu) is a space dedicated to tea ceremonies. It was shaped in the Middle Ages (1192–1573) when the tea ceremony was introduced. This occurred through a combination of the ornate zashiki clubhouse, which was a place where people could hold events such as singing and tea drinking, and the simplicity of the nunnery, which was a building inhabited by monks and hermits. In the Muromachi period, the innermost part of the townhouse was built to serve as a retirement home or a space for religious ceremonies. This later developed into a place for tea drinking [2].

The teahouse building comprises the teahouse itself and its extended external space, the *roji* (the courtyard leading to the teahouse). Teahouses are classified according to their function: as either a tea house or a water house. The tea ceremony house is where the tea ceremony is primarily held, forming the core of the teahouse building (including the tea table, bed, doors, windows, etc.). The *mizuya* is the room where the tea ceremony is prepared and is comparable to a kitchen (including the *mizuya*, doors, and windows). This is shown in Figure 3.

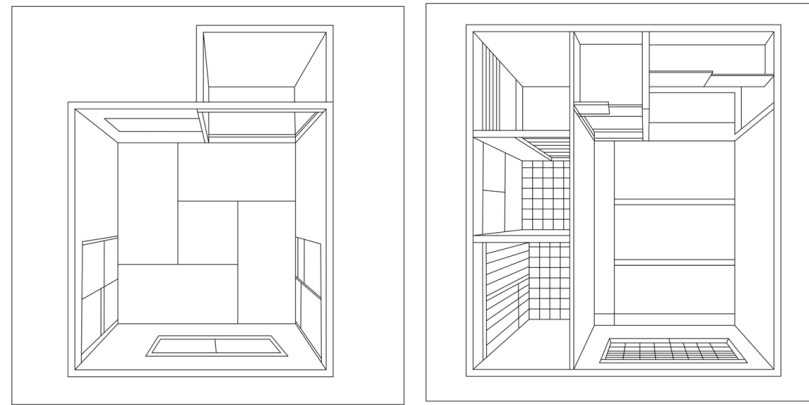


Figure 3. Research on Japanese Sadou Architecture, Master’s Dissertation. (Based on this thesis, revised and redrafted).

Two aspects embody Japanese culture: the tea ceremony and Zen Buddhism. These two elements are the main spiritual influences on traditional Japanese architecture. The tea ceremony calls for simplicity and elegance, while Zen Buddhism focuses on cultivating one’s inner self and embracing a simple lifestyle. Zen is the soul of Japan, and Zen Buddhism was introduced to the country from India via China in 1192. Spreading from the warrior class to the lives of the common people, Zen Buddhism gave rise to the tea ceremony, sparking a desire for simplicity, beauty, and self-craft among the Japanese people. Japanese tea culture combines daily life with religion, philosophy, ethics, and aesthetics. It has evolved into an artistic and cultural project that emphasizes creating a space for drinking tea, alongside the enjoyment of material things. This further deepens and cultivates aesthetic and ethical values through the tea-drinking ritual.

The architectural style of Japanese teahouses is characterized by a rich tapestry of cultural connotations, which align with the principles and practices of the Japanese tea ceremony. The architectural style of Japanese teahouses is characterized by an emphasis on six key principles: harmony, respect, clarity, silence, Zen, and modesty. Japanese Tea Ceremony represents harmony, respect, purity, and tranquility, which we must embrace in order to achieve the main purpose of the tea ceremony [27]. The tea-drinking process emphasizes simplicity and spiritual connection. Guests first calm their minds, crawl through the narrow *nijiriguchi* to enter—symbolizing detachment from the secular world—and appreciate the hanging scroll in the alcove. The host then serves a simple *kaiseki* meal. After eating, guests withdraw to the garden while the host prepares utensils for thick tea. Upon returning, the thick tea ritual begins: the host prepares a shared bowl, and guests pass it. The ceremony then moves to thin tea: the host serves individual bowls with dry confections, concluding with appreciation of the tea scoop and expressions of gratitude. As the ceremony ends, guests exit in turn. The essence of the tea ceremony can be traced back to the sophisticated Japanese tea culture system, as well as the prevailing philosophical ideas and behavioral principles that are embodied by the tea ceremony.

The tea ceremony is an embodiment of the art of the tea ceremony and a ritual for the practice of the tea philosophy by tea people. The image provides a comprehensive representation of the utilization of the Teahouse and the spatial environment in which it is employed. The following table provides a concise summary of the aforementioned points, arranged according to the sequence and content of the tea ceremony, as seen in Table 5.

Table 5. Contents of a traditional Japanese tea ceremony.

Order	Contents
Sho-za	Guests are permitted to enjoy the view and wait quietly in the designated waiting area on the outer exposed ground. The host welcomes the guests at the central door and then guides them into the Soto-Roji, where they are seated in the teahouse. Following the seating of guests, the host commences the “first carbon”, subsequently serving the guests “tea food”. Following the consumption of the “tea food”, guests are expected to depart the teahouse.
Naka-Dachi	The guest is seated in the Uchi-Roji of the “Nerudi” and awaits a second greeting from the host.
Go-za	The host initiates proceedings by requesting strong tea for the guest, subsequently performing the “Go-za”, and concluding with the order of thin tea for the guest. When the water in the tea kettle reaches its boiling point, the water is injected into the tea bowl, and the bamboo tea brush is used to stir the tea soup out of the even and fine bubbles. Following the consumption of the tea, which was of a particularly thin consistency, the host and guest exchanged farewell remarks, thus bringing the tea ceremony to a conclusion.
Space Order	Outside the Dojo Soto-Roji Lounge Soto-Roji Uchi-Roji Teahouse Soto-Roji Teahouse

3.2.2. History of the Traditional Japanese Teahouse

The history of Japanese teahouses encompasses a period of emergence, marked by the *sōan* teahouse; a phase of development, typified by the *samurai* teahouse; a period of prosperity, exemplified by the *shoin-zukuri* teahouse; and a phase of modernization. This historical progression has been characterized by a constant flux, transition, and continuity. In this study, the researcher has synthesized the historical development and evolution of Japanese teahouses by meticulously examining the vertical sub-systems and establishing horizontal connections. The findings of this research are summarized in the following table, as demonstrated in Table 6.

The design of the Japanese teahouse is summarized according to the period and the order in which they were taught, and their works. As demonstrated in Table 7.

The study of Japanese teahouses has now been elevated to a position of significance within the broader context of research on traditional Japanese culture. For instance, Dr. Teng Jun of Beijing University published the fourth chapter of *An Introduction to Japanese Tea Ceremony Culture—Tea Ceremony Architecture* in 1992, which provides a comprehensive study of its history, content, architecture, rituals, ideology, and aesthetics. As Okakura Kakuzo observed in his classic work *The Book of Tea*, “Indeed Cha-no-yu may be considered an epitome of Japanese civilization, for it is a well-blended mixture of elements drawn from the two most ancient cultures of the East eclectically acquired by extremely able and critical minds capable of discerning exactly how they could best use it for the convenience and education of their people” [28].

Research on tea ceremony architecture focuses on the analysis of tea ceremony architectural examples, the design approaches and basic structures of tearoom architecture, layout, and spatial atmosphere, as well as changes in spatial behavior and psychological perception. However, there remains a scarcity of research in the field of Japanese tea culture, particularly regarding the integration of its ideological connotations with the systematic summarization of spatial design transformations in tea ceremony architecture, empirical research on Japanese teahouses and tea gardens, and especially studies in grey space.

Table 6. Development of the traditional Japanese teahouse.

Periods		Heian		Kamakura		Muromachi		Azuchi–Momoyama		Edo	Meiji	Taishō		Shōwa	Nihonkoku
Time (year)		1192		1334		1573		1603		1868		1912		1926	1945
Affected period		Tang		Song		Ming & Qing									
Tea Ceremony		Aristocratic Tea		Monastery Tea		Menchā & Shoin Tea									
Development				Emergence		<i>Sōan</i>				Sukiya-zukuri				Modernizing	
Teahouse	Architecture	Monastery	Tea pavilion from China	Hiroshima	Clubhouse	Sukiya-zukuri	Nunnery	Teahouse 4.5 <i>Tatami</i>	Tiny Tea House	Ochaya	Machiai-jaya	Sencha Mat	Teahouse/ Sencha Mat		
Teahouse	<i>Roji</i>							Pingnai (Seeking Taoism)	The entry is as follows: The configuration has six realities and four scenes, and four realities and six scenes. The focus is on duplex and triplex <i>Roji</i> , which are integrated into the pool and spring courtyard.	The style is characterized by fluidity, with a focus on communication between the outside world and the mind, and artistic endeavors. The image herein presents a view from a seated perspective.				Shrinkage	
Spirituality		Impermanence				Zen (wabi-sabi)		Elegant		Essence—(Silence)					

Table 7. Designers of Traditional Japanese Teahouses.

Time (Years)	1423–1502	1502–1555	1522–1591	1547–1622	1544–1615	1578–1658	1579–1647
Representation	Murata Shaoguang (Founder)	Takino Saou (Herald)	Senrihu (The Greatest Collection)	Oda Yuraku	Oribe Furuta (Student of Chirishu)	Qian Zongdan	Kobori Tonshu (Student of Oribe Furuta)
Architecture			Myōki-an	Joan	Ennan	Konnichian	Mittan

3.2.3. Case Selection

To comprehensively present the evolutionary trajectory of grey spaces, this study focuses on three pivotal stages in the development of traditional Japanese teahouses when selecting cases. Three exemplars are examined: Myōki-an, Ennan, and Mittan. These, respectively, embody the aesthetic philosophies of Senno Rikyū and Kobori Enshū. This selection prioritizes the representation of three prototypes in *engawa*'s evolution within tea architecture: namely, the psychologically compressed threshold (Myōki-an), the dynamic visual event (Ennan), and the meticulously harmonized sequential framework (Mittan). It does not prioritize historical prestige. This selection enables systematic, controlled comparisons within a single typology across core dimensions—boundary treatment, visual control, natural integration, and flow sequences—transcending case studies to distil universally applicable spatial mediation mechanisms and adaptable design strategies.

During the data collection phase, a systematic review of relevant academic literature and historical archival materials was conducted. Case drawings, such as floor plans and spatial relationship diagrams, were analyzed to gather key information, including the design context of each case, the designer's core philosophy, spatial dimensional parameters, structural material selection, functional zoning layout, and tea ceremony ritual sequences. Emphasis was placed on documenting the morphological characteristics and functional roles of core elements, such as *engawa* verandas, doors, and windows. This accumulated rich and accurate foundational data for subsequent in-depth analysis.

This study utilizes a comprehensive review of extant literature on Japanese tea architecture to provide a detailed examination of the historical development of Japanese tea architecture. Empirical research is based on spatial analysis, and the case studies are representative of three developmental periods. Specific details are presented in Table 8.

Table 8. Three stages in the development of teahouse architecture.

Section	Generation	Development	Prosperous
Time	Muromachi period	Azuchi–Momoyama period	Edo period
Representative	Sen no Rikyū (1522–1591)	Oribe Furuta (1544–1615)	Kobori Enshū (1579–1647)
Characteristic	<i>Sōan</i>	<i>Samurai</i>	<i>Shoin-zukuri</i>
Name	Myōki-an	Ennan	Mittan
Size	2 <i>tatami</i>	3 <i>tatami</i> + <i>daime</i>	4.5 <i>tatami</i>
Historical Significance	Earliest extant <i>sōan</i> teahouse	Representative <i>samurai</i> teahouse	Representative <i>shoin-zukuri</i> teahouse

4. Case Study

The integration of traditional Japanese Teahouse architecture with Kisho Kurokawa's conceptualization of grey space is a notable feature, incorporating elements of traditional Japanese tea culture, tea ceremony principles, and the historical development of tea architecture.

- A. The gables, doors, and windows were selected to harmonize with the traditional architecture, and these elements are regarded as symbols. As demonstrated in Table 9.
- B. The integration of abstract geometric forms serves to explore philosophical and aesthetic ideas, which are then manifested in flat, pictorial, spiritual, as well as multi-valent, contradictory, and ambiguous *engawa* spaces. The employment of geometric

forms introduces abnormal distortions and continuities, which are then analyzed to expose their contradictory and multivalent implications.

Table 9. Elemental symbols of the *engawa* space.

Concept	Gables	Door	Window
Classification	mawari-en kirime-en kure-en sunoko-en takesunoko-en	Fusuma, <i>shoji</i>	short windows, pivot windows, view windows, leaky windows, decorative windows, etc.
Features	Primarily composed of wood and bamboo, it is employed for purposes including viewing, contemplation, the organization of tea events, and communication.	The primary focus of the work is on wood, complemented by washi paper. The pattern under scrutiny is characterized by a fine latticed geometry, incorporating natural light and shade in a manner that conveys a quiet, simple, unpretentious artistry.	

4.1. Myōki-An

Origins of the teahouse—Myōki-an/To-an, Mount Toyohide, as shown in Table 10. (Sen no Rikyū) 158.

Table 10. *Sōan* Teahouse—Myōki-an.

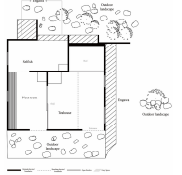
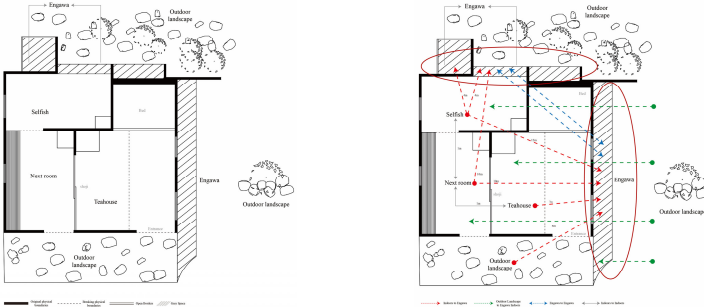
No.	Designer	Size	Time	Location	Structure & Material
1	Sen no Rikyū (1522–1591)	Amaya Sumikiri	Muromachi period —Azuchi– Momoyama period	Myoko-an, Yamazaki- cho, Kyoto	Wood structure
Design Method	Sen no Rikyū reduced the tearoom to 1.5–2 <i>tatami</i> mats, forcing close host–guest proximity to dissolve social barriers. This smallness spatially expresses <i>wa</i> (harmony) and <i>jaku</i> (tranquility) within <i>wa-kei-sei-jaku</i>. The corridor, where swords were hung, acted as a purifying threshold. Guests disarmed there, shedding social identity so the interior remained egalitarian. Replacing the fixed corridor with a movable sword rack in the <i>doma</i> shifted design from form to functional essence, preserving disarming while easing circulation. Windows in earthen walls admit and soften light, making shifting light a natural ornament. Removing a <i>doma</i> wall to form an <i>engawa</i> erased the interior–exterior boundary, allowing the tearoom and garden to merge. A cross-shaped corridor linked the toilet (secular, “impure”) and tearoom entrance (spiritual, “pure”), separating yet connecting service and ritual flows. Together, earthen walls and removed boundaries achieved a harmonious <i>sōan</i> aesthetic.				 Plan (Source: Drawn by the author)
<i>Engawa</i> Symbol		Analysis			
Space Composition	<i>Engawa</i>	In order to gain entry to the school, it is necessary to don clogs and proceed to the open ground. The rule of “changing into clogs” is essentially a ritualized design for physical and mental transition. Through this concrete bodily act, one symbolically sheds one’s everyday identity, redirecting attention toward the impending tea ceremony and thereby achieving psychological readiness before even stepping into the tearoom.			
	Door Entrance	Rikyū replaced the decorative “colored banners” at the entrance with a natural “earthen beehive” and shaped the entrance into an “overflowing” form. This alteration abandoned artificial ornamentation and clear boundaries, using instead humble materials and ambiguous forms to shape the natural, unadorned aesthetic core of the <i>kusame</i> style.			
	Window	Rikyū’s relocation of the tearoom’s main openings to the south transformed natural light from a passive element into an active design tool—harnessing dynamic southern sunlight to create a stable, controlled core illumination that shapes the ritual’s spiritual atmosphere. The addition of two low east wall windows introduced a low side light that interacts with the primary southern source, generating a deliberate interplay of light and shadow. This reflects Rikyū’s deeper intent to sculpt both space and mental state through illumination. The resulting triangular configuration between the entrance, <i>Temaeba</i> , and the <i>tokonoma</i> meticulously regulates light distribution. When the entrance is opened, focused light creates strong contrasts, akin to a spotlight—demonstrating how window placement and size were calculated to craft an ideal environment for shadow and concentration during the ceremony.			

Table 10. Cont.

No.	Designer	Size	Time	Location	Structure & Material
Experience Mechanism					The fence is a ritual filter that regulates guests' pace and mindset, preparing their transition into the tea ceremony while also serving as a reception area without excessive formality. The doma is an intermediate zone that blurs inside and outside, creating a spatial progression where nature and human order meet. Stepping stones guide movement and sight, turning the garden path into a spiritual prelude to the tea ceremony. These elements form an open tearoom layout with integrated seating. It transcends the conventional boundaries between the interior and exterior, enabling the textures of the teahouse and the borrowed landscape to permeate each other in both directions and blend together naturally. Here, occupants can experience both the introspective tranquility of the teahouse and the open embrace of nature simultaneously. Through minimalist design, the traditional teahouse's unidirectional concept of 'borrowing scenery' is elevated to a dual connection of 'space and spirit', offering a modern interpretation of traditional teahouse philosophy.

As illustrated in the accompanying images and tables, Myōki-an stands as the seminal model of the *sōan*-style teahouse, establishing the essential paradigm of the introspective grey space. Its design philosophy, reflected in the structural and material choices documented in the first table, employs minimal and natural techniques—compact forms, raw materials, and asymmetrical layouts—to cultivate an atmosphere of serene stillness. The spatial strategies shown in the second image—such as the *engawa* as a contemplative buffer, the controlled interplay of light through strategically placed windows (including the low eastern openings), and the deliberate entry sequence—actively guide both physical movement and perception. Finally, the experience mechanism outlined in the third section is realized through the compulsory stoop of the *nijiriguchi*, sensory shifts guided by light, and the tactile presence of materials. This creates a fully immersive, contemplative journey. In synthesis, through the dissolution of boundaries and the harmonious use of earthen walls, Myōki-an’s design transcends mere form. It transforms the grey space into a meditative bridge, seamlessly connecting the individual with the natural world.

4.2. Ennan

Development—Yabunouchi Ennan, (Oribe Furuta) 1615. As shown in Table 11.

Table 11. Yabunouchi—Ennan.

No.	Designer	Size	Time	Location	Structure & Material
2	Oribe Furuta (1544–1615)	Three-Mat Large-Eyed Companion Seat	Azuchi–Momoyama period–Edo period	Monzenmachi, Nishi Honganji Temple, Nishitoin-dori, Kyoto	Wood structureFirwood
Design Method	Material distinctions encode hierarchy through touch: <i>tatami</i> for host, untreated wood for guests. The “guest spirit stone” directs focus through its cool surface. Hand-axed textures and painted frames reinforce handcrafted materiality throughout. Tinted paper windows frame the host’s profile against backlight—visible only to rear guests. Floral hues lit by pale backlight demonstrate early use of natural light. The <i>roji</i> integrates garden views to mark transitions and mentally prepare participants. The hierarchical system in the Yabunouchi family’s tea ceremony reflects and reinforces external social power structures. Its strictness is seen in separate entrances for guests and attendants—a spatial discipline of the body that marks social rank. Serving tea to attendants acts as ritualized appeasement, maintaining hierarchy while securing compliance. This logic extends to seating, turning warrior society status into a micro-scale power map. Thus, the tea ceremony here was not merely a spiritual practice but a cultural tool that legitimized existing authority.				 Plan (Source: Drawn by the author)

Table 11. Cont.

No.	Designer	Size	Time	Location	Structure & Material
Engawa Symbol			Analysis		
Space Composition	Engawa	Ennan's <i>engawa</i> encodes social hierarchy through differentiated permeability. Separate entrances for host and guests, the <i>koshikake machiai</i> as a semi-public buffer, and material distinctions (untreated wood for guests, <i>tatami</i> for host) all render social status tangible at the threshold.			
	Door Entrance	The <i>koshikake machiai</i> prepares guests mentally before entry through its roofed bench, asymmetrical roof, and three-sided enclosure, which focuses attention on the garden. The <i>roji</i> (dewy path) controls movement pace, forming an isolated zone that cuts off daily distractions. Together, they create a sequenced progression that transforms both space and state of mind, encoding social order through spatial differentiation.			
	Window	The entrance is positioned at a path bend, creating a layered threshold that delays access. Hand-axed posts and painted window frames maintain material consistency with surrounding architecture, filtering entry through spatial and material articulation—encoding social hierarchy into the act of entering.			
	Window	The “bamboo cube” emerges before the resting area is revealed, manipulating visual rhythm and delaying full disclosure to create anticipation. This controlled progression guides movement and mental preparation. Floral hues illuminated through pale backlight demonstrate early use of natural light to enhance sequence—a technique later formalized as the “Hanamaki window” paradigm.			
Experience Mechanism	Window	Tinted paper windows on <i>Temaeza</i> walls selectively frame the host’s profile against backlight—visible only to rear-seated guests, creating visual hierarchy. Sleeve wall and center column articulate the threshold between performer and audience, reinforcing social roles through spatial division.			
	Window	Window alignment and asymmetry create visual rhythm. Sleeve wall intersects the ceiling at right angles, guiding the eye. Backlighting illuminates the host’s profile, using natural light to enhance sequential perception—transforming the window into a narrative device that controls revelation throughout the ceremony.			
	Window	The paired windows create visual rhythm through alignment, establishing order while selectively framing views. Deliberate asymmetry—particularly at key points like entrances and layered frames—activates the threshold condition, controlling how much is revealed to viewers in different positions. This nuanced openness filters visual access, reinforcing social roles through spatial differentiation.			
	Window	The window design balances symmetry and asymmetry to guide visual movement. Rational overall structure provides stability, while detailed variation introduces subtle tension that enlivens the sequential experience. This dynamic balance creates a layered progression of views, directing attention and enhancing the ceremonial journey through controlled visual revelation.			
Experience Mechanism			 The entrance bamboo cube filters vision, blocking outward views to turn attention inward. Tinted paper windows selectively frame the host’s profile against backlight—only rear-seated guests can observe this composed scene, encoding social hierarchy into visual access. Sightlines from indoor zones extend toward the <i>engawa</i>, allowing outdoor landscapes to permeate while maintaining filtered distance. The layout structures social and spiritual roles through materials: <i>tatami</i> (host) versus wood (guest) floors distinguish rank by touch; the “guest spirit stone” directs focus through its cool surface and alignment. Through zones, materials, and symbols, the design shifts participants from daily life into ritual roles, functioning as a perceptual interface where outdoor landscapes permeate indoors, and sightlines converge.		

Ennan exemplifies the *samurai* teahouse, where grey space shifts from personal introspection to expressing social order. Its design uses separate pathways and hierarchical seating to enforce warrior-society ceremony. The *koshikake machiai* (waiting benches) and asymmetrical roof structure social interaction while marking status. The bamboo cube at the entrance guides spatial understanding. Experience is structured through material cues: *tatami* vs. wooden flooring distinguishes rank; the “guest spirit stone” directs posture and focus; the asymmetrical fabric backdrop and *ōmegumi* tinted-paper windows allow rear guests to see the host's backlit silhouette, intensifying ritual identity. Thus, Ennan's spatial discipline and visual control make the tea ceremony a cultural tool that legitimizes social authority.

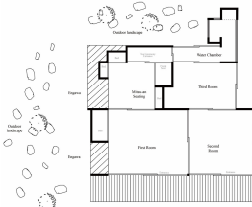
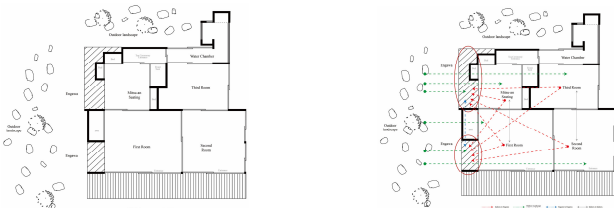
4.3. Mittan

The Peak—Daitokuji Temple Ryukouin Mittan, (Kobori Ensyuu) 1624, as shown in Table 12.

The teahouse represents the pinnacle of *shoin-zukuri* tea house design, achieving a synthesis and elevation of grey space across technical, functional, and spiritual dimensions. Its methodology fuses tea ceremony philosophy with palace construction expertise, giving rise to the mainstream academy style while pursuing the aesthetic ideal of “*utsukushisa-wabi*” (beautiful and quiet). As a daimyo demonstrating mastery across tea ceremony, architecture, garden design, and ceramics, Enshū infused his extensive palace-building expertise into teahouse design, endowing the space with a unified quality of craftsmanship

and spiritual disposition. In spatial composition, the *engawa* form evolved further, with precisely dimensioned rafters, trusses, and other components showcasing artisan skill. The deliberate exposure of structural joints and handcrafted traces added depth to the space. The multifunctional composite entrance design, integrating features such as a fire-taking aperture and tea-taking aperture, embodies the optimization of the tea ceremony process. In terms of experiential mechanisms, exposed structural details guide users to perceive the spatial logic, while integrated functional operations enhance ritualistic solemnity. The use of materials such as silver leaf and Tang paper under subdued lighting creates a tranquil sensory experience, achieving elevation from physical perception to spiritual contemplation.

Table 12. *Shoin-zukuri*—Mittan.

No.	Designer	Size	Time	Location	Structure & Material
3	Kobori Ensyuu (1579–1647)	Four-and-a-half-mat room	Edo period	East of Yonggwangin Hall, Daitokuji Temple, Yongbaoshan, Kita-ku, Kyoto	Wood structure Cypress, red pine, cedar
Design Method	Material-Tactile Transitions Exposed structural elements transform construction into ornament: paired pine whips, rounded cedar trusses. Red pine bark pillars and purple cypress handrails create tactile authenticity, contrasted with black lacquer—embedding rustic stillness within refined “kirei-sabi” forms. Integration of Natural Elements. Light calibrated through <i>shoji</i> and windows: ink window filters, base window opens to views. Borrowed scenery (<i>shakkei</i>) integrates mountain landscape, harmonizing architecture with nature. Enshū’s work synthesized the philosophy of <i>wabi-cha</i> with the formal rigor of palace architecture. By merging the tea ideals of Oribe’s school with aristocratic construction principles, he developed the “kirei-sabi” aesthetic—embedding rustic stillness within refined forms. This vision elevated <i>shoin-zukuri</i> to the mainstream teahouse style, transforming tea practice from a reclusive ritual into a cultural and artistic form suited to Edo <i>samurai</i> society.				 Plan (Source: Drawn by the author)
Engawa Symbol		Analysis			
Space Composition	Engawa	A visual inspection of the west eaves reveals distinct material choices. The Shoin section employs a single cypress whip and cypress trusses, while the teahouse utilizes paired pine whips and rounded cedar trusses. This differentiation is probably indicative of the formal character of the Shoin in contrast to the rustic aesthetic of the teahouse. The fence, with a height of 1.43 ft and precisely sized framing members (e.g., 1.4-inch diameter posts, 2.5 × 1.2-inch rails), achieves a balance between enclosure and visual permeability. It is noteworthy that the conceptual framework for the fence opening and stepping-stone configuration was devised by the monk Huanhai of the Lonely Temple, indicating a design that prioritizes spatial experience and transition over the mere function of delineation. The sequence creates a deliberate progression from approach to arrival. Stepping-stones guide movement across the threshold, while the fence opening frames views in succession, controlling visual revelation. Material shifts—from cypress (Shoin) to pine (teahouse)—mark the transition in spatial character. This unfolding from enclosure to opening prepares participants mentally, transforming movement into ritual.			
	Door Entrance	Calibrated openings—the fire-light port (<i>yushi-uchi</i>) and square port (<i>cha-do-uchi</i>)—integrate the entrance with the Shoin structure, creating layered thresholds that filter an <i>oku-yuki</i> access. A 2.2-foot-high <i>shoji</i> and 2.05-foot-high north canopy control visual and physical permeability while demarcating guest reception and tea ceremony areas. The small <i>shoji</i> by Matsushika Akiyoshi reinforces this threshold design’s orthodoxy. Height differentials and light orchestrate progression: a 7.1-foot ceiling contrasts with lower elements to guide movement; ground-level light from the fire-light port marks zone transitions. The interplay of high south <i>shoji</i> and low north canopy generates spatial tension along the path, embodying “<i>oku-yuki</i>” (spatial depth) and “appreciation of shadow”—transforming movement into gradual revelation.			
	Window	“Borrowed scenery” (<i>shakkei</i>) integrates the mountain landscape into the interior, creating visual permeability while maintaining physical separation. Shoin-style doors and ornate interior frame views and control access. Light and dark modulation further filter how the outside is revealed. The sequence unfolds through layered transitions, borrowed views guide the eye outward, while the dim interior draws attention inward—creating rhythmic focus shifts. Mittan’s ornate elements mark a formal progression, reflecting the tea ceremony’s evolution from private meditation to public display. However, the current dim state disrupts this intended light-and-shadow sequence.			
Experience Mechanism					
	The ink window frames views strategically, controlling revelation. The open base window maintains visual permeability while preserving spatial separation. These layered interfaces direct gaze toward the outdoor rockery, progressively integrating landscape into the experience through calibrated openings. Red pine bark pillars, purple cypress handrails, and a black lacquer bed frame create tactile authenticity. The front row adopts a pedestal posture, with a stove cut into the pedestal and a camellia-patterned central pillar. Together, these elements form a buffer zone enabling a gradual transition from “natural relaxation” to “ceremonial atmosphere”—creating composite transitional value for grey space, landscape, visual flow, and experiential journey.				

5. Conclusions

5.1. The Evolutionary Trajectory of the Engawa

The conceptual framework for creating grey spaces (*engawa*) in traditional Japanese teahouses reveals a clear evolutionary trajectory, as evidenced by representative examples from different historical periods. The thatched-roof teahouses, as exemplified by Myōki-an, established the foundational paradigm of grey space guiding personal introspection. Ennan, representing the development of *samurai* teahouses, expanded grey space into a vehicle for translating social order, embodying a transition from individual spirituality to sociality. By the zenith of the *shoin-zukuri* teahouse style, exemplified by Mittan, grey space achieved a profound integration of craftsmanship, ritual, and aesthetics. This evolutionary trajectory—from ‘individual introspection’ to ‘social order’ and finally to the ‘fusion of craftsmanship and artistic conception’—not only reveals the core value of grey space in harmonizing relationships between the self, society and nature, but also provides profound historical reference points for contemporary architecture in constructing transitional spaces imbued with cultural depth and spiritual significance, as illustrated in Table 13.

Table 13. Analyzing *Engawa* Design Through a Five-Dimensional Framework.

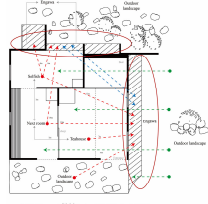
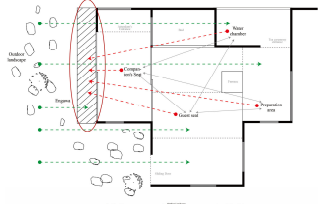
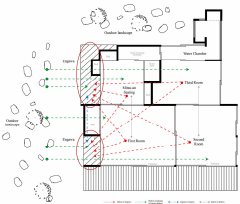
Analysis Dimensions	Myōki-an	Ennan	Mittan
Analytical diagram			
Boundary permeability	The <i>nijiriguchi</i> forces guests to crawl, using bodily humiliation to strip secular identity and achieve spiritual threshold crossing; earthen walls filter views and light, their rough texture blocking the outside world, compelling attention inward. Boundaries compressed to minimum permeability—achieving maximum spiritual focus through extreme physical obstruction.	Separate entrances for host and guests encode social hierarchy into architecture, permeability becoming a spatial projection of status; the position and scale of the <i>koshikake machiai</i> pre-sort guests by rank, making spatial sequence a rehearsal of social order. The <i>engawa</i> evolves into a differentiated interface, the boundary becoming a device for social filtering, its permeability contingent on status.	The composite entrance integrates multiple functional apertures, each precisely calibrated in scale and orientation, enabling the boundary to accommodate multiple ritual acts; exposed structural elements create layered transitions, each stage corresponding to a phase of ritual, transforming entry into a progressively revealing experience.
Fluid sequence	The path is inwardly focused; crawling through the <i>nijiriguchi</i> compresses “ <i>ma</i> ” into a momentary pause, carrying the transformation from secular to sacred; the minimalist path and threshold markers convert flow into focus, displacement becoming an occasion for introspection—simplicity intensifies ritual, embodying Zen’s “less is more.”	Sequence varies with identity, the rhythm of “ <i>ma</i> ” segmented by social hierarchy: shorter paths for higher status, longer sequences for lower ranks; spatial differentiation encodes social order, path length and visual openness becoming metaphors for identity; tiered seating translates hierarchy into experience, sequential flow becoming a performance of status, each movement reinforcing power relations.	The tiered transition creates a seamless flow where the concept of “ <i>oku</i> ” is progressively revealed, transforming the depths into a destination that is gradually unveiled. Functional openings integrate and optimise ceremonial sequences, blending utility with symbolism, and building anticipation with each turn. This sense of progression weaves a spatial narrative that culminates in a destination that transcends physicality to attain spiritual significance.
Material tactile transitions	Raw materials are not a limitation but a deliberate choice: rough textures evoke “ <i>wabi-sabi</i> ” through touch—perfection in imperfection, richness in austerity; the “unfinished” quality of materials guides spiritual introspection, the space becoming a vessel for contemplation rather than visual appreciation. Tactile minimalism achieves spiritual richness.	Material gradation transforms tactility into a medium of social perception. The contrast in firmness between the host’s <i>tatami</i> and the guest’s wooden flooring enables the perception of status directly through the soles of the feet. The abrupt change in boundary stone material reinforces the ritualistic threshold; each crossing serves as a physical reminder of an identity transition. The hand-axe texture preserves traces of craftsmanship, transforming the artisan’s physical presence into the user’s tactile memory.	Exposed structural members turn construction into ornament, “construction as aesthetics” making the building’s skeleton a tactile focus; the juxtaposition of rough red pine-bark pillars and smooth purple cypress handrails creates a tactile narrative: a dialogue between nature and artifice, sensing both natural presence and human craftsmanship; black lacquer contrasts with natural materials, embodying “ <i>kirei-sabi</i> ”—refinement retaining rusticity, the primordial visible within perfection.

Table 13. Cont.

Analysis Dimensions	Myōki-an	Ennan	Mittan
Integration of natural elements	Light filtered through earthen walls deliberately cultivates dimness, making shadow the spatial “protagonist,” blurring boundaries, dissolving certainty, opening towards the spiritual realm; natural elements remain “hidden” rather than displayed,” enabling users to perceive nature’s “aura”—subtle shifts in light, temperature, humidity becoming intangible mediators between human and nature.	Floral scroll windows and tinted paper windows transform natural light into “atmospheric light,” serving spatial hierarchy; light distribution is precisely controlled, the host illuminated, guests in dimness—visualizing social hierarchy. Natural elements are instrumentalized, becoming media to reinforce social narrative.	<i>Shoji</i> screens and windows segment, filter, and direct light, making it a “design element” for atmospheric creation; the interplay of light and shadow triggers contemplative stillness, time embodied, space acquiring vital rhythm; the pursuit of “ <i>kirei-sabi</i> ” aestheticizes nature, light, and shadow, becoming poetic media connecting the material and spiritual.
Visual transparency	Earthen walls obstruct sightlines, forcing vision to turn from the external world inward toward the spirit, from material reality toward mental contemplation; visibility is minimized, visual “scarcity” stimulating the “abundance” of other senses, achieving a redistribution of perception. Vision becomes a tool for introspection.	Transparency is segmented by social identity: higher status commands wider views, lower status has restricted sightlines; framing techniques visualize power relations—what is seen, from what angle, are socially encoded; visual layering reinforces hierarchy, vision becoming a disciplined act of power, each gaze confirming power relations.	<i>Shoji</i> provides layered transparency, creating tension between the visible and invisible; visual layered progression echoes spatial sequence, viewing becoming a gradual ritual, each penetration of sight corresponding to deeper understanding; transparency is both physical and symbolic, pointing toward the penetration of meaning, reaching spiritual essence through material form.
Conclusion	Physical compression achieves spiritual release. The minimalist, introspective interface enables spiritual connection, filtering the external world to hear the inner voice in silence. The <i>engawa</i> is an inwardly contracting spiritual threshold, its essence a vertical passage connecting self and nature.	Spatial differentiation achieves social structuration, architecture becoming a vessel for power. The <i>engawa</i> as social interface translates cultural hierarchy into spatial experience, bodily movement unconsciously confirming identity. Its essence is a horizontal field of tension between individual and society, private and public—an outwardly differentiating social interface.	Exquisite craftsmanship achieves spiritual transcendence, material space becoming a metaphor for the spiritual realm. The <i>engawa</i> is valued for its intrinsic beauty and craft, “ <i>kirei-sabi</i> ” realized as nature within refinement, rusticity retained within perfection. The composite, multi-layered interface fuses tea ceremony philosophy with construction craft, its essence an aestheticized interface connecting function and beauty, artifice and nature—a meticulously crafted artistic artifact.

As the table illustrates, these three case studies demonstrate how transitional spaces regulate the physical and mental states of individuals and their social relationships by avoiding binary oppositions. They also reveal how design objectives evolve. The focus shifts from individual care to socio-cultural integration, spatial composition develops from simple forms to complex systems, and the internalization process of experiential mechanisms transitions from the material to the spiritual level. The transitional logic of “grey spaces” in these cases is continued and innovated in modern architecture. Contemporary buildings often incorporate grey spaces, such as connecting corridors, semi-open terraces, and glass curtain-walled enclosures. These elements facilitate permeation between nature and the external environment, functioning as “elastic interfaces” that link diverse scenarios, such as office work, social interaction, and relaxation. They achieve a balance between spatial efficiency and experiential warmth.

This analysis illuminates the historical value of grey spaces and explains why design traditions persistently influence physical and psychological dimensions. These historical cases suggest that the value of grey space lies not in any fixed form, but in its capacity to adapt to different relational needs—whether mediating between self and nature (Myōki-an), individual and society (Ennan), or function and aesthetics (Mittan).

A comparison of these three cases reveals three defining characteristics of the evolution of *engawa* spaces. In terms of spatial form, there is a progression from simplicity and austerity towards refined craftsmanship. In terms of functional purpose, there is an expansion from a space that is merely transitional to a space that bears cultural significance and facilitates social interaction. In terms of experiential design, there is an upgrade from

an orientation that is focused inwardly to one that is focused on dual interaction—‘human–nature’ and ‘human–human’. These characteristics reflect the evolutionary trajectory of Japanese teahouse culture, aligning with the core value proposition of grey spaces: ‘facilitating connection and cultivating atmosphere’. Consequently, the design essence of traditional grey spaces can be summarized as follows: grounded in boundary treatment, mediated through material application, and oriented towards experiential creation. This logic has universal reference value for contemporary transitional space design.

Through preliminary case analysis, it is evident that the relationship between design methodology, spatial composition, and experiential mechanisms collectively forms the core logic underpinning the design of grey spaces (*engawa*) within traditional tea houses, as illustrated in Figure 4.

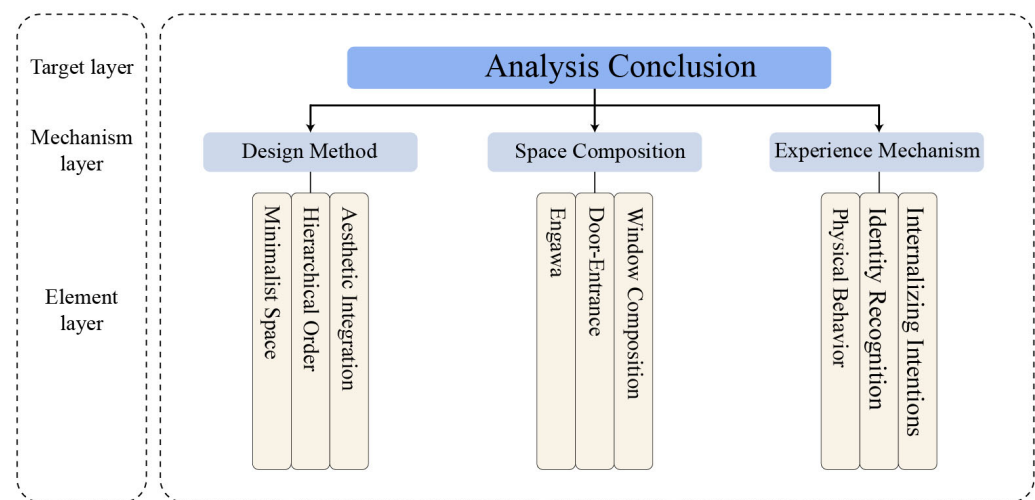


Figure 4. Case Study Summary Diagram.

Design methodologies may be realized through spatial minimalism, hierarchical order, and aesthetic fusion. About the design approach, the case studies demonstrate a clear evolution from function-driven behavior to spirit-guided experience. Myōki-an employs minimalist, primal, and small-scale design, utilizing asymmetrical layouts and natural materials to cultivate a serene atmosphere conducive to personal introspection. Ennan, conversely, materializes the rigorous order of *samurai* society into architectural language, transforming the space into a translational vessel for social structure through segregated circulation, hierarchical seating, and visual guidance. Mittan, by contrast, advances the design methodology further, integrating tea ceremony philosophy with palace construction techniques to pursue the aesthetic realm of “*kirei sabi*” (beautiful and quiet), achieving a unity of function, craftsmanship, and spiritual disposition.

In traditional Japanese teahouses, grey space is the result of a fusion of transitional, layered, and functional elements. The *engawa*, doors, and windows are key features in shaping the space. The *engawa* is a transitional zone for meditation, social interaction, and engagement with nature. Its form and function have evolved, from a simple meditative buffer zone in Myōki-an to a “waist-length” design in Ennan that enhances rest and social functions, to the precisely dimensioned, exposed-component construction in Mittan. Door design uses form, scale, and positioning to create sequences and rituals. Window design regulates light layers and visual direction, creating atmospheric spaces that shape the spiritual ambience of the teahouse. The holistic spatial composition achieves functional integration, guides behavior and psychology, and attains harmony between human, space, and nature, offering design insights for contemporary transitional spaces.

5.2. Implications for Contemporary Design

Design methodology shapes spatial composition, which in turn guides experiential mechanisms. These mechanisms then validate and refine the methodology's effectiveness and cultural depth. This relationship is not linear but organic. Together, these three elements define the value of grey space across multiple dimensions, as illustrated in Figure 5.

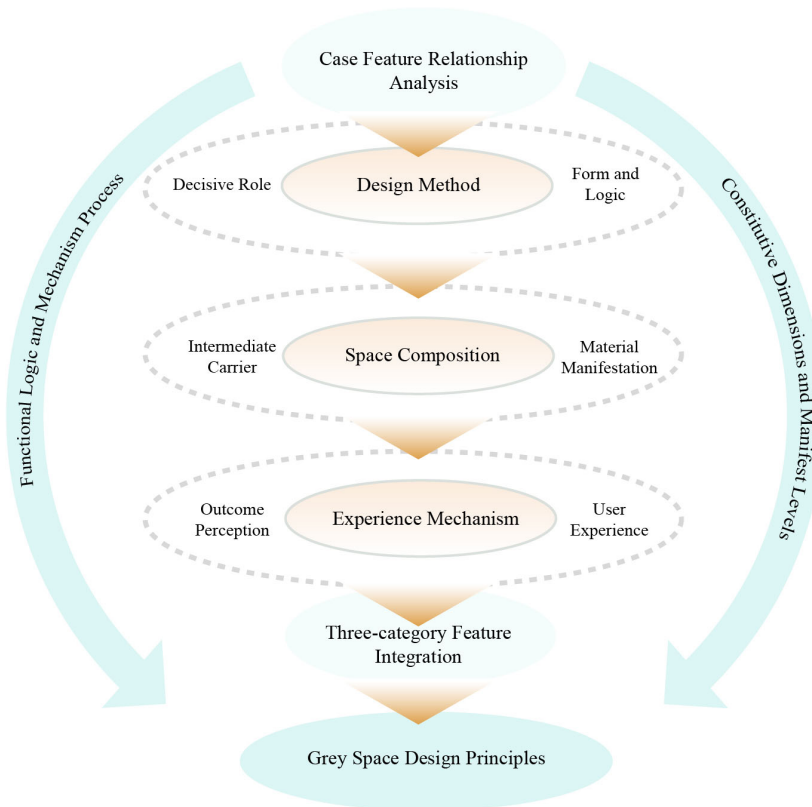


Figure 5. Interrelationship of Grey Space Design Dimensions.

Although the *engawa*'s form and function evolved, three underlying concerns remained constant: structuring spatial progression (layout), engaging the senses through materiality (materials), and creating atmospheric resonance (aesthetics). These dimensions form the enduring grammar of intermediary space design—a grammar that can be adapted but never abandoned in contemporary practice, as shown in Figure 6.

Layout creates fluid space that facilitates psychological transition and embodies dynamic equilibrium. This is achieved through progressive sequence, asymmetrical structure, and carefully crafted pathways. The design unfolds as a spatial narrative, establishing a clear hierarchy between external open areas, transitional *engawa* zones, and internal private spaces. This hierarchy softens boundaries and guides emotional transitions. Asymmetry breaks mechanical rigidity while creating dynamic balance. Elements such as stepping stones and waist-high railings imbue pathways with ritual significance, transforming walking into a meaningful experience.

Materials infuse space with vitality, historical depth, and rich layers. Timber, bamboo, and *washi* paper—their textures refined by time—convey warmth and continuity. Contrasts between *tatami* mats and wooden planks, rugged stone surfaces, and delicate botanicals heighten the perception of spatial identity.

Light and shadow create an artistic realm where the tangible and intangible intertwine. Window and door openings use natural light as a temporal medium. Focused illumination generates contrasts between light and shadow, while materials reveal subtle interactions

within soft glow. Light and shadow resonate with emotion and contemplative stillness. The aim is to dissolve boundaries between interior and exterior, transforming space into a breathing realm in symbiosis with nature. This forms an aesthetic system that transcends mere formal expression.

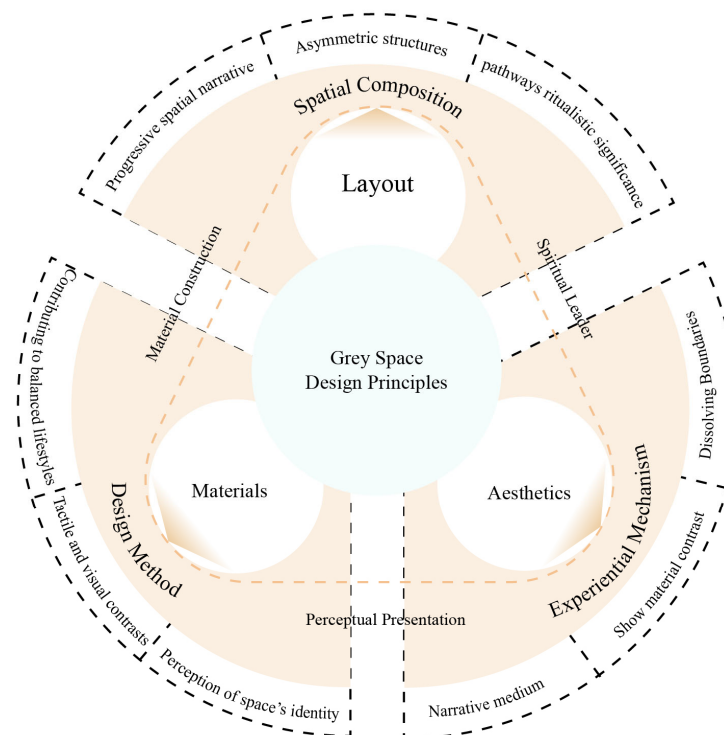


Figure 6. Systematic Framework of Grey Space Design Principles.

Japan's grey spaces offer valuable insights for contemporary architecture. Through layout, materials, and aesthetics, these spaces transcend pure functionality, imbuing buildings with emotional resonance and memory. In today's fast-paced urban environments, the grey space philosophy serves as a psychological buffer. It moves architecture toward a more humanistic ethos, fostering dialogue between the built environment and tradition, and ultimately contributing to more balanced, wholesome ways of living.

5.3. The Application and Development of Engawa in Contemporary Architecture

The design of the *engawa* in traditional Japanese teahouses offers lessons for developing contemporary grey spaces. In cultural and artistic complexes, boundary permeation techniques can create entrance buffers that serve waiting and social functions, improving pedestrian flow and visitor comfort. In urban residential architecture, integrating natural elements proves effective: tactile material transitions and visually permeable design techniques can alleviate the spatial oppressiveness of city living. In public buildings, the concept of "flowing sequences" enhances the ceremonial quality and continuity of spatial circulation, supporting users' psychological adaptation. These insights infuse contemporary architecture with traditional wisdom, seeking to balance functional requirements, cultural significance, and human experience. This approach enriches urban spatial quality and cultural heritage value.

Grey spaces in contemporary architecture embody traditional values while achieving functional expansion and semantic enrichment. They are practical, psychologically regulating, and transformative.

The discussion expands by introducing the concept of grey space to the understanding of urban exploration and the experimentation it entails, as an embodied and sensuous

engagement with the built environment [29]. This engagement is not merely physical but also profoundly psychological. The utilization of grey spaces serves to mitigate the oppressive sensation of enclosed interiors, achieving a balanced equilibrium between enclosure and transparency. This results in the evocation of openness and tranquility. The aforementioned factors serve to mitigate the impact of sudden transitions between internal and external environments, thereby fostering interaction and facilitating rest for emotional exchange and psychological adjustment.

As a space between interior and exterior, public and private, grey space accommodates tension and crafts a unique spatial experience. Through innovative design techniques—colonnades, frameworks, and layered openings—grey space enriches facades and spatial rhythms while demonstrating progressive development in material use and structural treatment. It transcends conventional interface concepts, achieving organic symbiosis between architecture and environment.

The evolution of traditional transitional zones into multifunctional spaces reflects grey space's expanding conceptual depth and innovative design approaches. These developments provide vital theoretical and practical references for contemporary architecture.

The evolutionary trajectory of the *engawa* offers not formal prescriptions but a way of thinking about intermediary space. Three lessons emerge from this historical study.

First, design begins with diagnosis. The *engawa's* form varied with social need—introspection, order, beauty. Contemporary designers should first ask: what relationship needs mediating? Is it the relationship between occupant and environment, between different social groups, or between competing activities? Different relational problems demand different spatial responses.

Second, mediation operates through multiple channels. The *engawa* achieves its effect through the orchestration of boundary permeability, sequential flow, material tactility, natural integration, and visual transparency. These five dimensions provide a checklist for designing spaces that genuinely mediate rather than merely connect.

Third, materiality and restraint matter. The *engawa's* power lies in its sensory immediacy—the warmth of wood, the texture of earth, the softness of paper—and in its refusal to draw attention to itself. Its job is to facilitate transition, not to announce its own presence. This suggests a design ethos of sensory richness combined with formal humility.

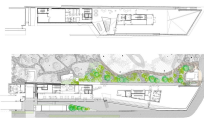
These lessons do not prescribe forms but frame questions. They shift the designer's task from imitating historical prototypes to diagnosing contemporary relational needs and crafting spatial responses appropriate to them.

In response to a brief calling for the connection of historic and new, Kengo Kuma's proposal for the Albert Kahn Museum and Gardens reinterprets the singularly Japanese *engawa*. This transitional space between interior and exterior weaves together built form and the idyllic greenery of the western Parisian landscape. The delicately folded shape emphasizes the corner site while allowing access to the gardens via semi-open spaces. The project ran from 2015 to 2017, as shown in Table 14.

During the twentieth century, Japanese architects increasingly moved away from the *engawa*. Kuma's design seeks to reinterpret this element in a contemporary context. The architecture features an *engawa*-inspired space that mediates between garden and art spaces. However, as Table 14 shows, this reinterpretation also reveals the challenges of translating historical forms. The wood-aluminum screen evokes the lightness of traditional *amado*, but the exposed space lacks the protective enclosure of a traditional *engawa*. The threshold experience is therefore not fully recreated. Rather than proving universal applicability, the museum serves as a useful case study in the limits of formal quotation. It suggests that the value of historical references lies less in replicating forms than in adapting their underlying relational logic—the capacity to mediate between inside and outside—to new conditions.

The success of such an adaptation depends on three interrelated factors: the design method, the spatial composition, and the experiential mechanism. At the Albert Kahn Museum, the design method successfully conveys a sense of material lightness through the wood-aluminum screen, and the spatial composition evokes a horizontal feel by aligning the path with the garden. However, the experiential mechanism is incomplete due to the absence of a protective roof or colonnade. This means that the bodily threshold experience, which is central to the *engawa*'s mediating role, cannot be recreated. This case study highlights that translatability depends on all three dimensions aligning with the underlying relational logic. Formal quotation alone cannot guarantee the recovery of spatial experience.

Table 14. Analysis of the Albert Kahn Museum and Gardens.

Project	Designer	Time	Location	Structure & Material	Image
Albert Kahn Museum and Garden	Kengo Kuma	2015–2017	Museum in Hauts-de-Seine	Wood, Glass, Brick, and Stone	 Albert Kahn Museum and Garden (Competition) Museum in Hauts-de-Seine, 2015, by Kengo Kuma
Design Method	The project's idea is the connection between old and new, and here the architect claims to employ the re-interpretation of traditional <i>engawa</i> in certain spaces. On the exterior, horizontality is emphasized with a meandering path. The overall material scheme is of aluminum for the city side and wood for the garden side, while it forms "a biological skin that gently adapts to different environments while interacting with them". The design of a wood-aluminum screen greatly diminishes the existence of the glass boundaries, while in turns introduce texture, lightness, and flexibility to the façade, which is coherent with the lightness and texture-rich quality of the traditional <i>shoji</i> sliding panels.				
Space Composition	The <i>engawa</i> is the part of the path that meets the garden. It shares the same wood material as the interior (opposite the glass panels) and runs parallel to the "garden" of masonry floorings and sunken platforms. A screen made from wood and aluminum resembles the panels between the Japanese house and the garden. The intention of creating an ambiguous space that extends from the interior towards the exterior is obvious from the use of materials. The emphasized horizontality is also coherent with the traditional Japanese house. Despite the presence of the glass façade, which might be required by the program, the design of a wood-aluminum screen greatly diminishes the existence of the glass boundaries.				
Experience Mechanism	The project shows a successful articulation of contemporary materiality in the expression of traditional <i>engawa</i> space. The body sensation of the "<i>engawa</i>" would fail to recall the experience in the traditional one, due to the overly exposed space without real presence of protection (roof or poles or otherwise), and the original edge condition as threshold and related bodily experience dismissed.				

5.4. Limitations of the Research and Future Directions

The present study is subject to two primary limitations. Firstly, the study relies exclusively on archival sources, historical drawings, and visual documentation; no empirical data on user experience were collected. While this approach is appropriate for historical analysis of spatial form, claims about how these spaces are experienced—how the *engawa*'s mediating mechanisms are perceived and responded to by users—remain inferential. It is recommended that future research endeavors seek to address this evident gap through the implementation of post-occupancy evaluations of surviving teahouses. These evaluations should encompass interviews with tea practitioners and observational studies of tea ceremonies in situ. This approach is expected to establish a more robust bridge between spatial analysis and human experience. Future research should conduct post-occupancy evaluations of teahouses still used for tea ceremony, examining how practitioners perceive and interact with the *engawa*, whether historical mediating mechanisms align with lived experience, and how contextual factors shape engagement. Ethnographic methods such as participant observation, interviews, and video documentation would help capture the temporal dynamics of spatial experience.

Secondly, the study focuses on three canonical examples. Whilst this selection facilitates controlled comparison and reveals clear evolutionary patterns, it is unable to capture the full diversity of *engawa* design across Japan's numerous tea schools and regional traditions. The floor plans and spatial diagrams employed in the case study tables have not been derived from official archives or original construction drawings. Instead, they represent secondary renderings created by the author after collecting publicly available online images and documentary materials to establish a unified analytical standard. While this approach ensures stylistic consistency within the analytical framework, the redrawing process involves inferential reconstructions of certain spatial details due to variations in resolution and perspective among the sources. This inherent limitation imposes significant constraints on the independent verifiability of the research findings. The evolutionary trajectory identified here—from inward contraction to outward differentiation to aesthetic elaboration—represents a dominant narrative, but alternative developments may also coexist. Furthermore, the findings are situated within the context of pre-modern Japan. The potential of *engawa*'s mediating logic to translate to address contemporary conditions, such as digital saturation, environmental crisis, and social fragmentation, requires further investigation. Future research must delve into how the *engawa*'s mediating logic can be strategically employed to respond to these contemporary spatial challenges. It is recommended that future studies augment the existing case base by incorporating non-canonical examples. This will facilitate a more comprehensive examination of the potential operation of analogous mediating mechanisms in diverse cultural and functional contexts.

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