

Phenomenological Inquiry into Physical, Social, and Sensory Attributes of Spatial Experience

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Abstract

Due to today's technological advancement, people are increasingly immersing themselves in the virtual representation of places without physically visiting them. This over-reliance on digital consumption creates a distorted sense of spatial experience for the current generation. In response, this research seeks to investigate the physical, social and sensory attributes of spatial experience through a phenomenological inquiry. The study employs a qualitative approach utilising a nonverbal interview method, drawing on interior architecture students' experiences of being in a place. The research concludes that the physical, social and sensory attributes of spatial experience accentuate how embodied experience in architecture shapes well-being beyond function.

Keywords: Physical, social and sensory attributes; spatial experience; phenomenological inquiry

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1.0 Introduction

1.1 Research Background

This research is driven by the urgency to reaffirm and strengthen the importance of in-situ architectural experience in contemporary society. In recent years, there has been a noticeable decline in both the quality and depth of architectural experience and appreciation, which has contributed to the prevalence of poorly conceived and executed built environments (Alan, 2022; Barreca, 2022). As digital technology becomes not only a dominant communication tool but also a central aspect of everyday living, people are increasingly drawn to virtual simulations of places rather than engaging with the physical environments around them. This tendency to immerse oneself in digital or augmented experiences without the necessity of actual presence raises critical concerns for architects, designers, and scholars of spatial experience.

The over-consumption of digital platforms as substitutes for physical presence creates what can be described as an “unreal” or detached sense of spatial experience. According to Valentine (2023), while virtual architectural environments provide valuable opportunities for studying spatial experience, they cannot fully reproduce the multisensory integration, embodied perception, and affective depth inherent in physical architectural encounters. While virtual and digital environments may offer valuable tools for creating and analysing the built environment, they do not yet fully replicate the embodied, multisensory experience of physical presence in a space (Lyu et al., 2023; Spangenberg et al., 2024). Therefore, the challenge lies in reconciling the growing dominance of digital technology with the need to cultivate and re-emphasize the value of realistic architectural experience.

1.2 Research Aim and Objective

Considering the current issues discussed above, this research places strong emphasis on the importance of experiencing architecture within a tangible, physical environment rather than through virtual or mediated means. Architecture, by its very nature, is not merely a visual or representational discipline, but one that engages the body, mind, and senses simultaneously. This can be referred to as the phenomenological approach in spatial experience. Building upon this theoretical grounding, the present research aims to explore the attributes of in-situ spatial experience, derived from the respondents' patterns of spatial perception and the existential senses within the space. By examining their perceptions and narratives, this study aims to understand how research respondents articulate and interpret their own encounters with space, as well as the aspects of these experiences they consider most significant. The central objective of this research is to investigate the physical, social, and sensory attributes of in-situ spatial experience through a phenomenological inquiry.

2.0 Literature Review

2.1 The Attributes of Spatial Experience

Physical Attributes

Human spatial experience can be understood as a complex cognitive and sensory process in which the act of sensing space becomes a medium for exploration, negotiation, and even critique of the built environment. As Ren (2022) notes, spatial experience extends beyond passive perception; it is an active engagement where individuals respond to the material qualities of architecture, testing its limits, questioning its implications, and uncovering meanings through their embodied interaction. The embodied materiality of space, encompassing textures, surfaces, structures, and finishes, serves as a mediator between the physical environment and human consciousness, influencing how occupants experience and emotionally respond to a place (Atmodiwirjo & Yatmo, 2018). In this sense, embodiment is not simply a technical or aesthetic concern but a fundamental element that shapes the lived quality of space.

Social Attributes

The richness of spatial experience arises from the dynamic interplay between the physical features of a setting and the social activities it accommodates (Medaković et al., 2024). Architectural form, scale, and spatial arrangement provide the foundation upon which social encounters unfold. As Ujang, Kozłowski, and Maulan (2018) argue, the practicality of physical settings creates opportunities for participation in meaningful activities, which in turn influence how individuals construct their social identity and develop emotional attachments to a place. A park, for example, is not only defined by its physical layout but also by the communal activities such as walking, gathering, and playing, that occur within it. Thus, spatial experience is always relational, bridging the tangible qualities of space with the intangible social interactions and memories that it nurtures.

Sensory Attributes

To clarify the conceptual grounding of the existential senses of spatial experience, Merriam-Webster (2023) defines existential as "a: grounded in existence or the experience of existence (empirical); b: having being in time and space". Applied to architecture, the term 'existential sense' refers to the embodied and situated processes of sensory engagement that occur in real-time and place within spatial experience (Pallasmaa, 2017; Yaffe and Langenthal, 2025). It emphasises the lived immediacy of perception, where the presence of the body in space activates awareness of existence. In an empirical study on the role of sensory stimuli in children's spatial perception, Turgay and Sarıberberoğlu (2022) found that the human senses directly shape how spatial perception unfolds, with responses varying according to the specific sensory stimuli present in the environment. Their findings highlight that sensory engagement is not merely supplementary but central to how people experience and understand space. Importantly, they conclude that sensory processes are vital in forming spatial experience, thereby reinforcing the critical role of the senses in establishing and sustaining the people-place relationship.

2.2 Physical Presence in Space and Place

Considering the physical, social and sensory attributes of spatial experience, it can be said that the most essential condition in experiencing a place lies in being in situ; the physical presence of an individual within the environment itself (Abdul Kadir, Aris and Ginting, 2024). Through embodiment, individuals move beyond passive observation and actively inhabit the space, thereby establishing a reciprocal relationship between their body and the environment. The physical qualities of a building or interior, such as its scale, materiality, texture, and proportions, play an integral role in this process. They manifest the architectural intentions and, in many cases, reflect institutional values and aspirations that are felt and interpreted by their occupants (Childs, 2021). Architecture, in this sense, becomes a communicative medium that conveys meaning not only through visual form but through lived bodily engagement.

Being in a place also entails a profound form of human interaction with the environment. The existential senses come into play as individuals perceive and respond to the interplay between tangible and intangible environmental elements. Light and shadow, natural ventilation and airflow, thermal comfort, acoustical resonance, and even the olfactory dimension of a space all contribute to shaping the embodied experience. According to Zumthor (2006), architecture achieves significance not simply through form or function, but through its capacity to evoke presence, atmosphere, and memory; all of which can only be understood through bodily encounter and sensory immersion in a place. These qualities are often subtle, yet they collectively establish the atmosphere of a place and significantly influence how it is perceived, remembered, and valued.

In this sense, architecture cannot be reduced to its physical form alone. Instead, it must be recognised as a lived phenomenon, where the tangible and intangible elements of the environment converge to generate a holistic sense of place. The act of being in situ allows individuals to encounter this convergence directly, cultivating a sense of belonging, attachment, and meaning that is integral to both personal identity and collective memory (Peace, Holland and Kellaher, 2017). Ultimately, the notion of being in a place underscores the irreplaceable role of physical presence in shaping spatial experience, reminding us that the depth of architectural understanding lies not in images or representations, but in the embodied act of dwelling within space.

2.3 Phenomenology in Spatial Design

The act of being in a place (in situ) relates directly to the phenomenology of experiencing a space. Phenomenology, as a philosophical foundation, focuses on the lived experience and the way individuals perceive and interpret the world through their consciousness and bodily engagement. In the context of spatial design, phenomenology provides a lens for understanding the subjective and sensory dimensions of human experience in space, moving beyond visual form and function toward emotional, perceptual, and existential depth (Merleau-Ponty, 1962; Norberg-Schulz, 1980; Pallasmaa, 2005). This approach acknowledges that space is not merely a physical container but a field of human experience that shapes and is shaped by our senses, memories, and emotions.

Furthermore, phenomenology introduces the concept of *genius loci* or the "spirit of place," a notion articulated by Norberg-Schulz (1980), which emphasises the importance of context in design. The identity of a place emerges through its interaction with natural, cultural, and historical conditions. By respecting these local particularities, spatial design can evoke a sense of belonging and continuity, aligning human experience with environmental meaning. Such designs nurture not only aesthetic satisfaction but also psychological well-being, as individuals feel rooted and engaged in their surroundings (Pallasmaa, 2012; Childs, 2021).

In contemporary spatial practice, phenomenology remains highly relevant as designers confront increasing digitalisation and visual dominance in design culture. The approach calls for a return to sensory awareness, encouraging spaces that invite touch, sound, and movement, rather than relying solely on visual consumption. Architectural phenomenology has become a framework for fostering empathetic and human-centred design thinking, enabling future designers to translate lived experiences into meaningful spatial expressions (Liu, 2025). Ultimately, a phenomenological approach in spatial design cultivates an architecture of presence; one that resonates with the human condition through embodied perception, material honesty, and the poetic depth of being in place.

3.0 Phenomenological Inquiry as the Research Methodology

Phenomenological inquiry is a qualitative research approach that seeks to understand and describe how individuals experience phenomena as they are lived. Rooted in the philosophy of Edmund Husserl, phenomenology emphasizes returning "to the things themselves," meaning that knowledge begins with direct human experience rather than abstract theory (Husserl, 1913). This was later expanded by Heidegger, who shifted phenomenology toward an existential focus, arguing that human beings are always already situated in the world, engaging with it through being-in-the-world (Heidegger, 1962). Therefore, phenomenology as a research methodology is not only descriptive but interpretive, as it uncovers the structures of meaning embedded in lived experience.

Through a phenomenological approach, this research employed a qualitative research method, specifically the 'non-verbal interview', which in this case was derived from the analysis of spatial experience portfolios. These portfolios were produced by a cohort of second-year interior architecture students (n=67) enrolled at a higher education institution in Malaysia. The portfolio assignment was designed not only as an academic exercise but also as a methodological tool for collecting rich, descriptive data on how students perceive and articulate their experiences of physical space. Each portfolio consisted of written narratives accompanied by photographic documentation of selected public places visited by the students, offering a combination of textual and visual insights into their spatial encounters. This methodological approach resonates strongly with Ray Lucas's discussion of non-verbal interviews in *Research Methods for Architecture* (Lucas, 2016), where portfolios and visual narratives are considered practical tools for eliciting tacit knowledge,

subjective interpretation, and experiential qualities of space that may not easily emerge through conventional verbal interviews.

At the outset of the data collection process, students were instructed to select a public space of their choice located within the Klang Valley region, an area that offers a diverse range of urban and cultural environments. Once their chosen site had been identified, students were required to conduct a site visit. During these visits, they were encouraged to spend sufficient time immersing themselves in the environment, observing its architectural features, engaging their senses, and reflecting on how the place influenced their perception and emotional response. This reflective process was intended to heighten their awareness of spatial qualities and to foster a more embodied mode of perception rather than a superficial or purely visual understanding of place.

The data gathered from the portfolios were subsequently subjected to thematic analysis to identify recurring themes within the data. Significant statements and reflections drawn from the students' narratives were systematically tabulated and organised into the physical, social, and sensory attributes of spatial experience. Alongside the narratives, keywords frequently mentioned by the students were also extracted and associated with each thematic category. This process enabled the study to capture both the depth of individual reflections and the collective tendencies across the group, providing a structured understanding of how spatial experience is perceived, articulated, and valued by interior architecture students, paralleled to the goal of phenomenological approach. As Creswell & Poth (2018) suggest, it is not to generalise statistical outcomes, but to uncover the essential qualities and shared meanings of a phenomenon as experienced by multiple individuals.

4.0 Research Findings

Table 1 presents a synthesis of the key aspects that shape the spatial experience of being in a place, based on phenomenological reflections gathered from 67 of the research respondents. These experiences are categorised into three major dimensions: physical, social, and sensory attributes.

Table 1: The Thematic Analysis of Physical, Social and Sensory Attributes of Spatial Experience

ATTRIBUTES	KEYWORDS	ILLUSTRATIVE INSIGHT (Paraphrased from Respondents)
Physical Attributes	Design and Accessibility	Well-designed building with ramps, ample parking, and accessibility for elderly, children, and wheelchair users.
	Concept and Style	Modern Islamic design; elegant, non-distracting, but visually engaging.
	Natural Light	Use of glass and transparent roofing to enhance daylight and spaciousness.
	Open Space and Double Volume	Open layout without partitions; double-volume ceiling enhances openness and freedom.
	Materiality	Solid wood and glossy finishes create a luxurious and elegant interior.
	Indoor Plants	Indoor greenery improves aesthetics, mood, and air quality.

	Colour and Design Scheme	Consistent use of corporate colours and harmonized furniture themes.
Social Attributes	Visual Connection between Occupants	Open layout enables visual interaction between staff and visitors.
	Diverse Occupants	Space is used by people from various backgrounds and purposes.
	Friendly and Welcoming Vibes	Warm greetings and lively atmosphere enhance visitor experience.
	Gathering and Socialising Activity	Space functions as a hub for social interaction, not just its primary purpose.
	Vibrant Community Seating that Encourages Interaction	Active surroundings with diverse cultures and demographics. Variety of seating encourages interaction; shared experiences foster connection.
Sensory Attributes	Acoustic/Noise	Water features add ambience but may create excessive noise.
	Scent/Smell	Natural scents like timber and bamboo evoke memory and connection.
	Sense of Calmness	Neutral colours contribute to a peaceful state of mind.
	Thermal Comfort	Well-balanced temperature with breathable, open spatial design.
	Calming Ambience	Prayer spaces promote tranquility through design and atmosphere.
	Sense of Comfort and Peacefulness	Natural elements like wind and water enhance serenity.
	Warm Light and Coziness	Soft lighting creates a warm, intimate environment.
	Music and Nostalgia	Ambient music or remembered melodies evoke emotion and memory.

The physical attributes were the most frequently referenced, with respondents highlighting aspects such as accessible design, architectural concept and style, natural light, open space, materiality, indoor greenery, colour palette, and overall design scheme. These elements reflect how form and function converge to influence perception. Natural light and open spaces, for instance, were often associated with feelings of openness, clarity, and comfort. At the same time, materiality and indoor plants were noted for creating warmth, texture, and a sense of connection to nature. The social attributes of space also played a significant role in the respondents' narratives. Keywords such as visual connection, diverse occupants, friendliness, welcoming atmosphere, social gathering, vibrant community, seating configuration, and interaction underscored the importance of human relationships within spatial environments. These findings highlight that architecture does not exist in isolation but is activated and given meaning through human engagement. Respondents frequently described how the presence of other people, opportunities for interaction, and a sense of inclusivity enhanced their perception of place. The emphasis on vibrancy and community also reflects human needs for shared experiences and collective memory, reinforcing that spaces are valued not only for their design but also for the opportunities they provide for social connection and interaction.

Equally important were the sensory attributes, which revealed how respondents described their experiences in terms of embodied perception. Keywords included acoustics, scent and smell, calmness, thermal comfort, breathability, calming ambience, comfort, peacefulness, cosy atmosphere, warm lighting, and even nostalgic music. Many respondents emphasised how these sensory elements shaped their emotions and moods, making them feel at ease, reflective, or connected to the place. Such findings affirm that spatial experience is not solely visual but deeply multisensory, with auditory, olfactory, and tactile cues contributing as much to perception as sight. Taken together, these findings illustrate that spatial experience is constructed through a dynamic integration of physical qualities, social interactions, and sensory perceptions. Each of these aspects plays a distinct yet interconnected role, shaping how individuals perceive, feel, and attach meaning to space. The convergence of these three dimensions demonstrates that architectural design cannot be reduced to physical form alone; it must also account for the lived, social, and sensory experiences that ultimately define the essence of a place.

5.0 Discussion

In synthesising these findings, it becomes clear that spatial experience is not a singular or isolated phenomenon, but rather a layered and interdependent construct. The physical attributes provide the structural and aesthetic foundation, setting the stage for how space is initially perceived and navigated. The social attributes infuse life and meaning into the built environment, transforming it from a mere physical container into a place of belonging, interaction, and collective memory. The sensory attributes, in turn, personalise and deepen the experience, engaging the body's existential senses to create an intimate and affective bond with the environment. The convergence of these three dimensions highlights the centrality of the people-place relationship in architectural experience. Spaces are not only designed and occupied but also lived, felt, and remembered.

Through this process, individuals begin to construct a sense of identity that is deeply rooted in their encounters with place. A building or space becomes significant not solely because of its form or function, but because it provides a medium through which people can connect with themselves, with others, and with the world around them. This is supported by Pallasmaa (2005), who establishes that architecture provides the framework within which permanence and change coexist. Through its materiality, durability, and experiential presence, architecture allows occupants to develop a sense of belonging, not only to a physical location but also to a community and a shared temporal moment (Pallasmaa, 2005). The sense of being rooted in a place fosters stability and identity, both of which are essential for human flourishing in an increasingly fragmented and digitised world.

This triadic framework (physical, social, and sensory attributes) gains even greater importance when considered against the backdrop of contemporary digital lifestyles. In an era where virtual platforms and simulated environments increasingly mediate human interaction, there is a risk that the richness of embodied spatial experience may be

overshadowed or undervalued. However, the findings of this study reaffirm that no digital substitute can fully replicate the existential dimensions of being physically present in a place, as paralleled in some previous studies on virtual architectural environments (Lyu et al., 2023; Spangenberg et al., 2024; Valentine, 2023). The multisensory engagement, the lived immediacy of social interaction, and the tangible qualities of materials and atmosphere together produce an irreplaceable depth of in-situ spatial experience.

6.0 Conclusion

This study demonstrates that the physical, social, and sensory attributes of space are inseparable dimensions that collectively shape the in-situ experience of architecture. Physical qualities such as design, materiality, light, and spatial configuration provide the structural and aesthetic framework for perception. At the same time, social interactions and inclusivity infuse spaces with meaning, connection, and a sense of belonging. Simultaneously, sensory elements, ranging from acoustics and scent to warmth, light, and tactile engagement, deepen the embodied experience, fostering emotional and cognitive responses that cannot be replicated through digital or virtual environments alone. Together, these three dimensions illustrate that spatial experience is a holistic, lived phenomenon, where the act of being present in a place engages the body, mind, and senses in ways that contribute to well-being, identity, and community.

In an era increasingly dominated by digital mediation, this research reinforces the irreplaceable value of physical, multisensory engagement in architectural experience. It highlights the importance of phenomenological awareness in both design practice and the education of interior architecture. Such encounters nurture not only mental clarity and psychological resilience but also emotional stability, underscoring the role of spatial perception and existential senses in cultivating a more profound sense of belonging. Ultimately, the findings advocate for human-centred design approaches that prioritise presence, sensory richness, and meaningful social interaction, ensuring that architecture continues to resonate with the human condition in its fullest sense. A well-designed architectural space must reflect an empathetic and human-centred approach, positioning people as the core of design thinking and affirming architecture's ability to support emotional, social, and cultural life.

7.0 Moving Forward

In light of contemporary lifestyles increasingly shaped by digital technologies, this relationship between people and place has taken on new dimensions. While there is a growing concern that virtual engagement might erode authentic spatial experience, several recent studies have found that digital tools can also play a supportive role in enhancing the physical and social contexts of spaces. Research on "third places", the informal public spaces such as cafés, libraries, or community centers, reveals that digital technologies, when thoughtfully integrated, can enhance the people-place relationship rather than

replace physical interactions (Magkou & Pélissier, 2021; Abdul Kadir, Aris & Ginting, 2022). For instance, online networks can extend the reach of local communities, while digital media can enrich the cultural programming of physical places, thereby strengthening people-place connections.

This research supports the development of more experiential and reflective learning in interior architecture education. Particular attention is given to the perspectives of interior architecture students, who, as future professionals in the field, represent a critical group whose awareness and sensitivity to spatial experience will shape future design practices. By doing so, the research not only highlights the elements that contribute to meaningful architectural experiences but also provides insights into how spatial education can better cultivate students' sensitivity to the lived experience of architecture. Ultimately, this study aims to contribute to ongoing discussions that reaffirm the relevance of physical architectural experiences in an era where virtual engagement increasingly dominates everyday life.

Article Contribution to Related Field of Study

This study contributes to the field of interior architecture and spatial design by reaffirming the significance of phenomenology as a framework for understanding the embodied, sensory, and social dimensions of spatial experience. Through its phenomenological inquiry into the physical, social, and sensory attributes of being in situ, the research extends architectural discourse beyond visual and functional considerations. It also advances interior architecture education by promoting experiential and reflective learning approaches that nurture design empathy and sensory awareness among students. More broadly, this study enriches the people-place discourse by highlighting that meaningful architectural experiences emerge through lived, bodily engagement, reminding designers and educators alike of the irreplaceable value of physical presence in an increasingly digitalised world.

Authors Declaration

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