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MULTISENSORY ARCHITECTURE: FROM VISUAL DOMINANCE TO SOMATIC EXPERIENCE

ARCHITEKTURA WIELOZMYSŁOWA: OD WIZUALNEJ DOMINACJI KU SOMATYCZNEMU DOŚWIADCZENIU

Abstract

The dominance of visual communication, amplified by digital media and ubiquitous advertising noise, reduces space to a two-dimensional image. Amidst an overload of visual stimuli, the contemporary recipient does not need more images so much as a more intense, holistic engagement of the entire perceptual system. This article addresses these issues from a phenomenological perspective, framing the response as a shift toward multisensory architecture. Through case studies, the article demonstrates that tactility, sound, and olfaction serve as operational tools for creating inclusive, existentially meaningful architecture, which functions as a somatic experience rather than merely a visual object.

Keywords: *multisensory architecture, olfaction, phenomenology, somatic experience, tactility*

Streszczenie

Dominacja przekazu wizualnego, potęgowana przez cyfrowe media i wszechobecny szum reklamowy, redukuje przestrzeń do dwuwymiarowego obrazu. W warunkach nadmiaru bodźców wzrokowych współczesny odbiorca nie potrzebuje kolejnych obrazów, ile intensywniejszego, bardziej integralnego pobudzenia całego układu percepcyjnego. Artykuł podejmuje temat odpowiedzi na te zagadnienia w ujęciu fenomenologicznym jako zwrot ku architekturze wielozmysłowej. Poprzez studia przypadków artykuł pokazuje, że taktylność, dźwięk i olfaktoryczność są operacyjnymi narzędziami kształtowania inkluzywnej, egzystencjalnie znaczącej architektury, która funkcjonuje jako somatyczne doświadczenie, a nie jedynie wizualny obiekt.

Słowa kluczowe: *architektura wielozmysłowa, fenomenologia, olfaktoryczność, somatyczne doświadczenie, taktylność*

1. INTRODUCTION

Contemporary visual culture has reached a level of intensity difficult to compare with any previous moment in history. Mass-produced and continuously processed images have become the dominant medium through which the world is perceived. Architecture, as a discipline, has always been strongly linked to representation. Designs are increasingly perceived solely

through images. As a result, the experience of space is reduced to what is visible, and other senses are marginalized. This phenomenon can be described as "oculocentrism," the dominance of sight as the primary tool for understanding and evaluating reality. In architecture, it manifests itself in design subordinated to the aesthetics of the image: facades become scenography, interiors become frames, and space becomes a backdrop for photographs. Social media further reinforces this mechanism, promoting architecture that looks good in photos but does not necessarily offer a rich sensory experience. In this approach, the user is reduced to the role of a passive observer. However, humans do not experience space solely through sight. Experiencing the space is a multisensory process, rooted in the body, encompassing touch, hearing, sound, as well as memory and emotion. The moving and responsive body constitutes the true point of reference for architecture. Reducing experience to an image leads to its shallowness, and consequently, to the creation of spaces devoid of depth, identity, and the ability to build a relationship with the user.

In response to this crisis, the need to experience with multiple senses is being increasingly expressed. This is not a nostalgic return to the past or a passing aesthetic fad, but a necessity stemming from the biological and psychological nature of human beings. Multisensory architecture involves designing spaces that engage the entire spectrum of human perception, where materials, temperature, acoustics, smell, light, and shadow are employed consciously and as an integrated whole. In this approach, the body is not an accessory to the project, but its primary recipient and measure. Adopting a somatic perspective also means shifting the way we think about architecture from an object viewed to a lived experience. Space ceases to be a static image and becomes a process that unfolds over time and movement. This shift in emphasis from seeing to feeling opens the possibility of creating architecture that is more empathetic, rooted in human experience, and thus more lasting and meaningful.

This article is grounded in the conviction that multisensory architecture is not an alternative to the dominant visual paradigm, but rather its necessary complement. In the face of image overload and the digital mediation of reality, a return to the body becomes a prerequisite for reclaiming the fullness of spatial experience. The senses, beyond sight, are not an addition to architecture, but its fundamental perceptive apparatus. They determine whether space is merely seen or truly experienced. Their interplay reveals the full potential of place, its atmosphere and mood, which constitute a profound, corporeal understanding of architecture.

2. ATMOSPHERE AS A PHENOMENOLOGICAL ECOSYSTEM

Architecture that goes beyond the dominance of vision reveals its full essence only through direct bodily experience. That which is tangible, audible, and perceptible forms a deep layer of perception and atmosphere, more enduring than the image. These aspects do not function independently, but intertwine into a single, somatic experience, constituting the atmosphere of a place. This perspective finds strong support in phenomenology. Maurice Merleau-Ponty, one of the key figures of this movement, emphasized that the body is the primary medium of perception and being in the world[1]. It is through the body that humans navigate their surroundings, build relationships, and give meaning to what surrounds them. In this sense,

[1] M. Merleau-Ponty, *Fenomenologia percepcji*, Wydawnictwo Aletheia, Warsaw 2001, pp. 94–97.

architecture is not a collection of forms, but a field of experiences that only become apparent through contact with the user[2].

Phenomenology rejects the privileging of sight as the primary sense, emphasizing the equality and interplay of all senses. Juhani Pallasmaa developed these ideas in architecture, criticizing its contemporary retinality, or reduction to the image perceived by the eye. In his view, truly meaningful architecture engages the body as a whole, creating spaces that can be not only seen but also felt and remembered[3]. Moving beyond the visual paradigm does not mean negating sight, but redefining its role. In Juhani Pallasmaa's phenomenology, vision is essentially a far-reaching extension of the sense of touch. The eye acts as an extended receptor of the somatosensory system, instantly translating light stimuli into neural representations of a surface's texture, hardness, and thermal properties before the body makes direct contact with it.

From a phenomenological perspective, the concept of atmosphere, a difficult-to-grasp yet fundamental dimension of space, also becomes crucial. Atmosphere is often experienced even before it is named or interpreted. Architecture, which operates at the level of atmosphere, directly affects the senses and emotions, creating experiences deeply rooted in bodily memory. Incorporating phenomenology into architectural discourse means shifting the focus from volumes alone to experience, from representation to presence. Design ceases to be merely a process of composing shapes and images, but becomes a practice of shaping experiences. In this approach, the architect does not so much create an object as design the conditions under which a specific way of being in space can occur.

Multisensory architecture, understood in this way, is not an addition to a project, but its very essence. Phenomenology provides tools for understanding why the experience of space cannot be reduced to visual representation. At the same time, it points to a practical direction: design that begins with the body, its scale, movement, and sensitivity, rather than with the image. In this sense, returning to the body is not only a theoretical postulate but also a design method capable of restoring architecture to its existential dimension.

The concept of atmosphere is one of the key tools in the phenomenological description of architecture, allowing us to capture what defies clear formal or functional analysis. In Peter Zumthor's essay "Atmospheres" there is a description of it as an immediate, holistic impression of space, a feeling that occurs even before conscious interpretation[4]. Atmosphere is not an addition to architecture, but its immanent property, resulting from a complex interplay of material and immaterial factors.

Similarly, Gernot Böhme develops the concept of atmosphere as something that exists neither solely in the object nor in the subject, but in the relationship between them[5]. Atmosphere is dispersed throughout space, permeating it, and interacting with the body, evoking specific emotional and bodily states. In this sense, architecture not only organizes space but also shapes the way it is experienced[6].

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[2] J. Hale, *Merleau-Ponty dla architektów*, Narodowy Instytut Architektury i Urbanistyki, Warszawa 2025, pp. 33–66.

[3] J. Pallasmaa, *The Eyes of the Skin: Architecture and the Senses*, Academy Editions, London 1996, pp. 19–22.

[4] P. Zumthor, *Atmospheres: Architectural environments. surrounding objects*, Birkhäuser, Basel 2006, p. 13.

[5] G. Boehme, *The aesthetics of atmospheres*, J.P. Thibaud (ed.), Routledge, Basel 2016, pp. 123–158.

[6] G. Bohme, *Filozofia i estetyka przyrody w dobie kryzysu środowiska naturalnego*, Oficyna Naukowa, Warszawa 2002, pp. 46–61.

Atmosphere is composed of many interacting elements that influence comfort and the physical states of the body. Elements such as light, materials, textures, sounds, smell, temperature, air movement, and many others. These factors do not function in isolation. They create a dynamic, interconnected system that can be described as a phenomenological ecosystem. A change in one of them influences the entire experience, often in ways difficult to predict at a purely visual level. It is within this ecosystem that the atmosphere and mood of a place are shaped as a dimension of space, which we experience immediately and comprehensively. Importantly, these reactions are not exclusively cultural in origin; they also have a biological basis, stemming from the body's evolutionarily developed sensitivity to environmental conditions. For this reason, we instinctively want to remain in some spaces, while others prompt us to quickly leave. We cannot always rationally justify these situations, as they precede reflection and language. Architecture that consciously manipulates atmosphere can modulate these responses. Atmosphere as a phenomenological ecosystem indicates that the quality of a space stems not only from its form but also from the intensity and coherence of the experience it generates. It is this that determines whether architecture remains merely an object viewed or becomes a place that we truly experience and remember.

3. SPATIAL MANIFESTATIONS

Touch, sound, and smell – these three senses – should not be marginalized in architectural discourse. They emerge as key tools in shaping atmosphere and the human relationship with space. Designs by Peter Zumthor, Nikola Bašić, Kengo Kuma, and Thomas Heatherwick demonstrate how stone, brick, wood, water, air, and vegetation can be combined to guide the body, regulate the intensity of stimuli, and build the multisensory experience and memory of place.

3.1. TOUCH: TACTILITY AND TEXTURE

Touch is the most direct way to connect with architecture. Often, small interactions build trust in a space, confirming its materiality and structure. Even a step becomes a cognitive act; the foot registers the texture of the floor, its elasticity, temperature, and resistance. Haptics also encompasses the contact of the hand with architecture: the weight and resistance of a doorknob, the smoothness of a handrail, the grain of a wall. Haptic architecture is experienced through the skin, enhancing the sense of spatial experience.

In multisensory architecture, tactility and texture become key design tools. According to these ideas, Peter Zumthor's projects particularly well demonstrate how consciously the haptic experience can be composed[7]. The Vals Thermal Baths are a renowned example of architecture where stone and water form a single, tactile experience. The walls and floors, arranged in multiple layers, create a remarkable landscape[8]. The feet experience constant changes in texture, from smooth slabs to rough surfaces, as well as temperature differences (Ill. 1). This forces the body to move more carefully and slowly, and spatial awareness is built primarily through the sense of touch, not just sight.

[7] P. Zumthor, *Thinking architecture,* Birkhäuser, Basel 1998, pp. 9–11.

[8] S. Murray, *Material Experience: Peter Zumthor's Thermal Bath at Vals*, "The Senses and Society" 2007, no 2(3), pp. 363–369.

At the Kolumba Museum in Cologne, touch organizes the interior experience through contrasting materials. Specially fired, gray, porous brick creates rough, slightly uneven textured walls. Smooth, cool concrete floors enhance the difference between vertical and horizontal. The porous brick also filters light and affects the microclimate, allowing changes in temperature and lighting to be felt on the skin, and texture becomes a factor regulating the intensity of stimuli.

In both examples, touch is not an accessory, but a very important medium for experiencing space. The varying texture and temperature of the stone at Therme Vals guide the user toward tranquility, while the rough brick and smooth concrete at the Kolumba Museum support the contemplation of art while simultaneously providing a strong sense of the body's presence in space. Tactile perception in this way becomes an important tool for multisensory and inclusive architecture, allowing for orientation within a building and regulating stimulation through materials, not just visual stimuli.

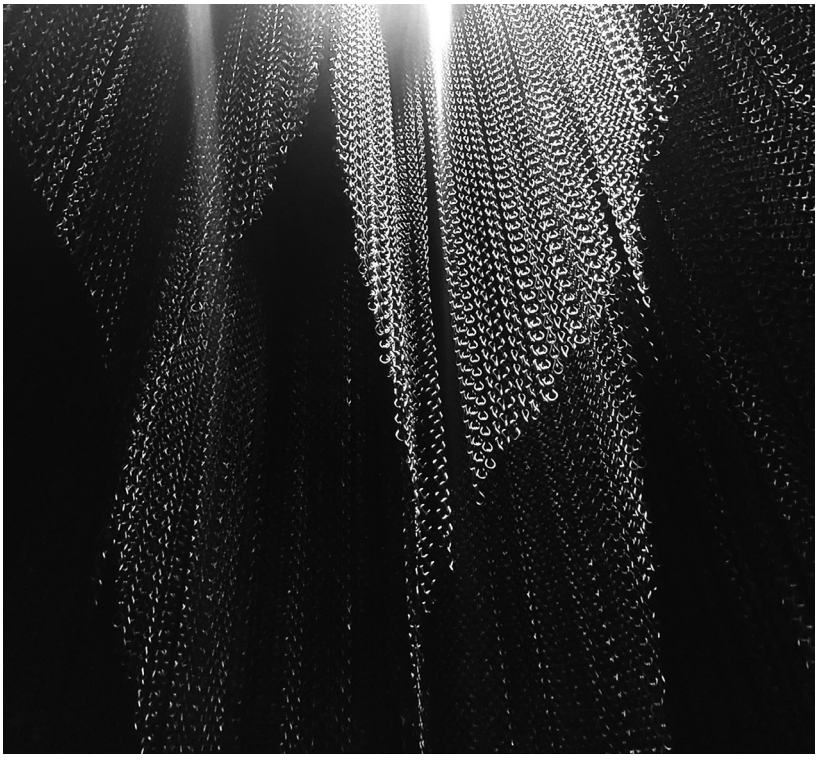


Ill. 1. An example of multi-sensory architecture: focus on tactility and texture. Vals Thermal Bath, architect Peter Zumthor, source: https://commons.wikimedia.org/wiki/File:Brutarchitekt_Therme_Vals.jpg, photo by Brutarchitekt, (access: 1.07.2026)

3.2. SOUND: ACOUSTICS AND ECHO

Each space also possesses its own soundscape, which, like light, shapes its character. Architecture can be understood as a musical instrument: it shapes, reflects, dampens, and amplifies sounds. Footsteps in a high, hard corridor echo, heightening the sense of scale and distance. Soft materials and lowered ceilings, in turn, absorb sound, creating conditions conducive to concentration and intimacy. Niches, wall angles, or changes in material can create acoustic refuges, places of tranquility within a larger whole. Acoustics thus becomes a tool for regulating the rhythm of experience, from expression to contemplation[9].

The Sea Organ in Zadar is an architectural installation built into the stone seafront, designed by Nikola Bašić. Hidden beneath the marble steps is a system of pipes and whistles that harness the energy of the waves. The water forces air into the structure, generating a continuous, changing sound. A meditative "sea music" is created, without a composer, but with a clearly defined architectural structure. The steps themselves become a space for listening. People can sit, look toward the horizon, and experience how the movement of the water is translated into sound. Here, architecture is transformed into an instrument, and hearing is a crucial medium of perception.



Ill. 2. An example of multisensory architecture: focus on acoustics. Staircase filled with aluminum chains, designed by Kengo Kuma, atrium of Casa Batlló in Barcelona (photo: author)

[9] B. Blesser, L.R. Salter, *Spaces Speak, Are You Listening? Experiencing Aural Architecture*, MIT Press, Cambridge, MA 2007, pp. 1–9.

Kengo Kuma's intervention at Casa Batlló transforms an existing staircase into a vertical, multisensory space covered by a cascade of aluminum chains. A curtain of hundreds of thousands of meters of anodized aluminum creates a "second skin" for the stairs, capturing and dispersing light like a net while simultaneously acting as a soft acoustic filter (Ill. 2). The chains conceal technical elements, including sound-absorbing panels, and their multilayered structure dampens and disperses the noise of footsteps, conversations, and installations, smoothing the sound of vertical communication. While the project does not generate its own sound like the Sea Organ, it demonstrates the other aspects of working with acoustics. The design modulates existing sounds, reducing reverberation and harsh acoustics in favor of a rustling, soft atmosphere. This is a highly significant example of how a single architectural element can simultaneously shape light, sound, and touch, aligning with the logic of multisensory architecture.

3.3. SMELL: OLFACTORY EXPERIENCE AND MATERIALITY

The olfactory dimension of architecture is sometimes overlooked, even though it may strongly influence the perception of a place. It can reinforce its identity, build a continuous experience, or, conversely, introduce dissonance. Scent not only describes a space but also imprints it in memory, making it possible to return to it even after a long time, through a single, fleeting impression.

Scent architecture often utilizes natural materials that react with moisture and temperature, gradually releasing aromas. In this example, scent becomes part of the spatial composition, not an addition, but a consciously designed dimension of the atmosphere, noticeable immediately.

Peter Zumthor's Swiss Pavilion for the Expo 2000 in Hannover, called the "Klangkörper," was a massive structure of untreated larch and pine wood, held together with steel tensioners instead of nails. The fresh, almost unhewn wood, exposed to the summer sun, released its resin, creating the scent of a dense Alpine forest that permeated the entire pavilion. The aroma here was not a technological addition, but rather a direct result of the use of a specific material in a large volume. Visitors experienced the space not only visually but primarily through the sense of smell. Entering the pavilion meant immersing themselves in the scent of the forest, creating strong, physical associations with the Swiss landscape.

In the design of the Bombay Sapphire distillery in Hampshire, architecture becomes a direct, physical reflection of the aroma creation process, extending far beyond the confines of a typical industrial building. Heatherwick Studio abandoned the traditional division between production and tourism, opting for a complete integration of both worlds, allowing visitors to experience the authentic steam distillation process. A key element shaping the space is two intertwined greenhouses, which rise directly from the historic buildings (Ill. 3). One houses tropical plants, the other Mediterranean species, materializing the brand's olfactory foundation at the heart of the facility. The result is a space that not only tells the story of scent, but also provides visitors with an opportunity to experience the space thorough smell[10].

Both projects treat scent as a key element of the narrative. In Zumthor's, the intense scent of wood evokes memories of the Alpine landscape and anchors the pavilion in Swiss identity.

[10] T. Heatherwick, M. Rowe, *Thomas Heatherwick: Making*, The Monacelli Press, London 2012, pp. 80–95.

For Heatherwick, smells are part of the process of exploring an architectural object. In the context of multisensory architecture, scent acts as a design layer that evokes emotions, builds associations, and enhances the memory of place.



Ill. 3. An example of multisensory architecture: focus on olfactory experience. Thomas Heatherwick's glasshouses for the Bombay Sapphire distillery, source:https://commons.wikimedia.org/wiki/File:Thomas_Heatherwick_glasshouses_for_the_Bombay_Sapphire_distillery_01.jpg, photo by Andrewrabbott (access: 1.07.2026)

4. SUMMARY

Multisensory architecture represents a shift from a building understood as an image to be viewed, toward a space experienced with the whole body and all the senses. It is not about adding a few effects, but recognizing that being in space is a holistic, somatic experience. Multisensory design means accepting that architecture is not primarily a matter of form and prestige, but rather a way for humans to perceive the world. Many examples demonstrate that atmosphere is not merely an effect of form, but the result of consciously composing

relationships between the senses. Architecture reveals itself here as a phenomenological ecosystem, in which the quality of space stems from the coherence of experience, not solely from its visual representation.

References

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