

# **Towards a Language of Atmosphere: Drawing-Based Approaches to Investigating Affective Architectural Experience**

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*Architectural atmospheres play a central role in shaping the affective dimension of spatial experience, but their relational, subjective, and elusive character makes them difficult to communicate and analyze. This paper examines how atmospheric perception can be conveyed through representational techniques, arguing that drawing is particularly suited to this task because it mediates pre-reflective experience and reflective articulation, allowing layered and tacit impressions to be translated into visuospatial constructs. An interdisciplinary review of emotional and sensory cartographies provides the basis for introducing graphic techniques that render atmospheric qualities perceptible, open to discussion, and responsive to design. Within this framework, aura is proposed as a threshold condition that intensifies atmospheric presence and makes it more readily legible. Building on dimensional models of affect, especially arousal and valence, the paper recasts psychological concepts as minimal descriptive tools for architectural interpretation and integrates them into a specific representational device: atmospheric tableaux. A pedagogical experiment engaging architecture students explores how these tableaux can foster an affectively attuned understanding of space and support the development of design sensibilities attentive to experiential, emotional, and sensory aspects. Overall, the paper contributes to the formulation of a language of atmosphere that bridges phenomenological insight, design expertise, and graphic representation.*

## **Introduction**

### **Affective Architectural Experience**

Our architectural experiences are fundamentally and consistently affective. In a sociocultural context in which emotions are widely embraced across disciplines, sometimes in overstated or uncritical ways, and increasingly commodified to influence behavioral patterns and purchasing decisions, understanding their role in architectural design becomes not only a matter of refining disciplinary knowledge but also a question of scientific responsibility and professional ethics.<sup>1</sup> Despite their centrality, emotions remain an epistemically unsettled domain:<sup>2</sup> they are complex,

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1. Jelić, A., and E. Canepa. "Exploring the Affective Dimension of Architectural Atmospheres through the Lens of Enactive-Embodied Cognitive Science." In R. Kazig, D. Masson, M. Welton, I. Wiczorek (ed.), *The Routledge Handbook of Ambiances and Atmospheres*. Abingdon and New York, NY: Routledge, 2026 (forthcoming).

2. Galimberti, U. *Il libro delle emozioni*. Milan: Feltrinelli, 2021.

multicomponent processes, open to a plurality of investigative approaches. This condition calls for conceptual tools capable of accounting for emotions as situational, relational, and pre-reflective phenomena, constituted through ongoing interactions with the external environment,<sup>3</sup> rather than as isolated internal states.<sup>4</sup> Approaching emotions as spatially mediated foregrounds their emergence within concrete situations, their relational structure, and their pre-reflective mode of appearing, with affective qualities pervading the spatial configuration as a whole and extending beyond discrete elements.

From this perspective, *atmosphere*, conceived as an “ambient medium,”<sup>5</sup> offers a particularly pertinent paradigm for addressing the affective dimensions of spatial experience, serving as the unity of qualities that confers coherence, identity, and meaning on how space is lived. Atmosphere refers to what we perceive in, about, and through our surroundings<sup>6</sup> before directing attention toward individual objects, people, or events with their specific properties and affordances<sup>7</sup>. We enter a room, walk along a street, or look out of a window and immediately grasp the overall atmospheric character of a building, a city, or a landscape. Atmospheric impressions are always situated within temporal, spatial, and social contexts; they arise through the interplay between the setting and those who engage with it, co-determined by body-mind dispositions, personal preferences, and past experiences, as well as by ongoing tasks, intentions, needs, and concerns,<sup>8</sup> which activate and complete the latent potential of a given environment. As such, atmospheres tend to operate at a pre-cognitive level, preceding conceptual articulation and reflective judgment — thereby orienting perception and action through a tacit, embodied sense of unity.

Until a few years ago, architectural theory, criticism, and education had not explicitly or systematically formalized atmospheric dynamics, even though atmosphere has been an intrinsic component of architecture since its origins.<sup>9</sup> Today,

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3. Robinson, S. *The Architecture of Resonance: From Objects to Interactions*. Abingdon and New York, NY: Routledge, 2026.

4. Environmental psychology has approached emotions in cyclical waves: after an initial phase in which affective processes were explicitly acknowledged, the field shifted toward a strongly cognitivist orientation that sidelined emotional phenomena, only recently returning to a more balanced perspective that reintegrates affect as a core dimension of human-environment interaction (Kals & Müller, 2012).

5. Bruno, G. “In the Air: Atmospheric Thinking.” *Venti Journal: Air, Experience, and Aesthetics* 2, no. 2 (2022).

6. Sumartojo, S., and S. Pink. *Atmospheres and the Experiential World: Theory and Methods*. Abingdon and New York, NY: Routledge, 2019.

7. Affordances refer to the action possibilities that the surroundings offer to a perceiving agent, arising from the coupling of environmental features and the organism’s sensorimotor skills (Gibson, 1979).

8. Canepa, E. “The Atmospheric Equation and the Weight of Architectural Generators.” In E Canepa, B Condia (ed.), 18-55, *Generators of Architectural Atmosphere*. Manhattan, KS: New Prairie Press, 2022.

9. Canepa, E. *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Milan and Udine: Mimesis International, 2022; Mallgrave, H. F. “Atmospheric Histrionics.” In E Canepa, B Condia (ed.), 133-163, *Designing Atmospheres: Theory and Science*. Manhattan, KS: New Prairie Press, 2023.

we are witnessing an “atmospheric turn”,<sup>10</sup> understood as an outgrowth of the broader “affective turn” that emerged in the humanities and social sciences in the early to mid-1990s and that emphasizes the centrality of affect in configuring everyday experience.<sup>11</sup> This shift is supported and reinforced by recent progress in cognitive science,<sup>12</sup> which provides new perspectives on our inseparable interaction with the environment. Concepts such as *embodiment* and *enactivism*<sup>13</sup> have gained prominence, together with renewed attention to topics including *empathy*, informed by discoveries on the neurophysiological mechanisms underlying mirroring in actions, emotions, and sensations, whose implications extend to aesthetic engagement,<sup>14</sup> now increasingly regarded as inherently multimodal, affectively modulated, and motorically grounded.

Given the situated, relational, and pre-reflective nature of atmospheres, as outlined above, their investigation requires approaches suited to integrating body and space, conscious experiences and preconscious or nonconscious processes, as well as phenomenological and cognitive-scientific modes of inquiry. To comprehensively decipher our emotional resonance with architectural atmospheres, a *multi-perspective framework* is therefore needed,<sup>15</sup> combining first-person accounts of consciously felt experience with third-person measures that track and compare nonconscious bodily interactions with space. Within this methodological constellation, design knowledge plays a distinctive role by contributing tools and methods grounded in first-person experiential articulation, leveraging its long-standing expertise in observational and representational practices.

Drawing is especially suited to this task because it mediates between pre-reflective perception and reflective articulation: sketches, diagrams, and maps make it possible to render visible and communicable the otherwise elusive interplay among space, body, and perception.<sup>16</sup> The aim of this paper is to advance the crafting

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10. Griffero, T. *Atmospheres: Aesthetics of Emotional Spaces*. Burlington, VT: Ashgate, 2014; Griffero, T. *La svolta atmosferica: Una introduzione*. Rome: Tor Vergata University Press, 2025.

11. Gregory, P. *The Quest for Empathic Architecture: Prospects, Concepts, and Critical Aspects*. Milan and Udine: Mimesis International, 2025; Thibaud, J.-P., N. Tixier, and D. Zerbib (Ed.) *Ambiances: A Sensitivity to Ordinary Situations*. Abingdon and New York, NY: Routledge, 2026.

12. Mallgrave, H. F. *Architecture and Embodiment: The Implications of the New Sciences and Humanities for Design*. Abingdon and New York, NY: Routledge, 2013.

13. Embodiment and enactivism are related concepts in cognitive science that challenge traditional theories separating mind, body, and environment, instead understanding them as a unified system. *Embodiment* highlights the role of the physical body in shaping both emotion and cognition, while *enactivism* extends this idea by proposing that cognition and emotion emerge through our ongoing, interactive engagement with the surrounding world.

14. Freedberg, D., and V. Gallese. “Motion, Emotion and Empathy in Esthetic Experience.” *Trends in Cognitive Sciences* 11, no. 5 (2007): 197-203; Gallese, V. “Aesthetics and the Unconscious: Toward an Embodied Neuroscience of the Image.” *Journal of the American Psychoanalytic Association* (2025): 1-27.

15. Jelić, A., and E. Canepa. “Exploring the Affective Dimension of Architectural Atmospheres through the Lens of Enactive-Embodied Cognitive Science.” In R. Kazig, D. Masson, M. Welton, I. Wiczorek (ed.), *The Routledge Handbook of Ambiances and Atmospheres*. Abingdon and New York, NY: Routledge, 2026 (forthcoming).

16. Canepa, E. “Spazio, corpo e percezione: Il disegno come strumento di rappresentazione e analisi dell’immisurabile in architettura.” *GUD (Genova University Design): A Magazine about*

of a *language of atmosphere* that articulates atmospheric impressions with greater clarity and nuance. This endeavor entails translating affect-based constructs well-established in psychology, such as arousal and valence,<sup>17</sup> into drawing-driven models specifically tailored to the interpretation of architectural experience and conveyed through a range of formats, including verbal and nonverbal features. While this research focuses on the development of graphic methods for engaging with the first-person, consciously accessible dimensions of atmospheric perception, complementary third-person approaches targeting the (neuro)physiological underpinnings of spatially situated emotional experience are addressed in related work.<sup>18</sup>

As interest grows,<sup>19</sup> so does awareness of the challenges involved in formulating a phenomenology of atmospheres,<sup>20</sup> particularly in identifying the lived qualities that characterize them, such as invisibility, incorporeality, complexity, ephemerality, subjectivity, and ambiguity. It is precisely this vagueness and elusiveness<sup>21</sup> that make the study of architectural atmospheres most productive when read through the effects they prime in our bodies and perceptions.<sup>22</sup> Drawing emerges as a crucial tool, allowing us to visualize, interpret, and communicate *how we feel space* in ways that verbal or analytical means cannot fully capture. In addition to examining how atmospheres are perceived, drawing offers a promising medium for envisioning and anticipating possibilities for feeling certain atmospheres by exploring what a place might afford: a kind of *proto-atmosphere*,<sup>23</sup> whose indeterminacy proves remarkably persuasive in orienting an overall understanding of the project.<sup>24</sup> An atmospheric approach thus becomes an affect-based strategy of analysis, knowledge, and

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*Architecture, Design and City* s.i. (IDEA — Innovation Design Application 2025 edition: Conference Proceedings) (2025): 151-166.

17. These notions are examined in the *Atmospheric Tableaux* section.

18. Canepa, E. “Investigating Atmosphere in Architecture: An Overview of Phenomenological and Neuroscientific Methods.” In E Canepa, B Condia (ed.), 27-71, *Designing Atmospheres: Theory and Science*. Manhattan, KS: New Prairie Press, 2023; Jelić, A., and E. Canepa. “Exploring the Affective Dimension of Architectural Atmospheres through the Lens of Enactive-Embodied Cognitive Science.” In R Kazig, D Masson, M Welton, I Wiczorek (ed.), *The Routledge Handbook of Ambiances and Atmospheres*. Abingdon and New York, NY: Routledge, 2026 (forthcoming).

19. The expanding scholarly attention to atmospheric themes is reflected in several special issues of journals in architecture and related fields: Holl et al., 1994; Gerhard & Conrads, 1998; Havik et al., 2013; Edensor & Sumartojo, 2015; De Matteis et al., 2019; Bergamo & Marques, 2025; Barbara et al., 2026.

20. Seamon, D. “Architecture and Phenomenology.” In N de Warren, T Toadvine (ed.), *Encyclopedia of Phenomenology*. Cham: Springer, 2025.

21. Griffero, T. *Atmospheres: Aesthetics of Emotional Spaces*. Burlington, VT: Ashgate, 2014.

22. Canepa, E., Z. Djebbara, K. Güler, L. Andrighetto, I. Schiavetti, V. Scelsi, A. Jelić, and B. Condia. “Architectural Atmospheres, Priming Effects, and First Impressions: A Multi-Perspective Approach Integrating Self-Report Assessments and Physiological Responses.” *Architectural Science Review* 68, no. 5 (2025): 379-391.

23. Nunes de Vasconcelos, G., and G. Rolla. “Perceiving and Creating Atmospheres: How Ecological-Enactive Cognition Can Explain and Inform Architectural Practice.” *Adaptive Behavior* 32, no. 2 (2023): 103-115.

24. Wigley, M. “The Architecture of Atmosphere.” *Daidalos: Architecture Art Culture* 68(Constructing Atmospheres) (1998): 18-27.

design,<sup>25</sup> underpinned by the recognition that atmospheres can be suggestively cultivated but never deterministically established,<sup>26</sup> as they are interwoven with innumerable factors,<sup>27</sup> many of which are contingent and lie beyond the scope of design intentions and capabilities.

This paper situates its inquiry within a critical interdisciplinary review, drawing on references from sociology, ethnography, art, and design, where research on emotion-place relationships has reached a level of maturity that has fostered the development of specialized fields such as emotional geography;<sup>28</sup> it then advances a pedagogical experiment conducted with architecture students. More specifically, the discussion addresses two related graphic techniques with distinct methodological roles: *atmospheric cartographies*, which have been more extensively explored to date, primarily in urban contexts, are examined through an overview of contemporary literature and practice; in parallel, *atmospheric tableaux* constitute the core experimental case study, investigating the affective potential of selected spatial frames through the manipulation of architectural, environmental, and situational qualities.

In dialogue with current discussions on drawing as a humanistic, participatory, and critical medium,<sup>29</sup> the analysis assesses how representational techniques can foster a deeper understanding of how individuals perceive, interpret, and give meaning to architectural space, enriching conventional modes of spatial depiction with experiential and affective insights. Although the field has expanded substantially,<sup>30</sup> existing approaches continue to reveal gaps between theoretical ambition and practical application, especially when affective phenomena are framed either too anecdotally or too reductionistically. Overcoming these limitations is essential to the development of more rigorous and sensitive methods.

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25. Canepa, E., and B. Condia. "On Generating Domestic Atmospheres Which Nurture Our Bodies and Moods." In K Güler (ed.), 187-204, *Transforming Issues in Housing Design*. Hoboken, NJ: John Wiley and Sons, 2024.

26. Stec, B. Conversations with Peter Zumthor. *Casabella* 719 (2004): 90-95.

27. Canepa, E. "The Atmospheric Equation and the Weight of Architectural Generators." In E Canepa, B Condia (ed.), 18-55, *Generators of Architectural Atmosphere*. Manhattan, KS: New Prairie Press, 2022.

28. Davidson, J., and C. Milligan. "Embodying Emotion Sensing Space: Introducing Emotional Geographies." *Social and Cultural Geography* 5, no. 4 (2004): 523-531; Davidson, J., L. Bondi, and M. Smith. *Emotional Geographies*. Burlington, VT: Ashgate, 2007.

29. Leandri, G. (Ed.) "Drawing as a Tool to Investigate, Communicate, and Express Emotions." A special issue of *GUD (Genova University Design): A Magazine about Architecture, Design and City* (2025).

30. Bergamo, F., and M. Marques (Ed.) "Imaging Atmospheres." A special issue of *Img Journal* 12 (2025).

## Literature Review

### Atmospheric Cartographies

Atmospheric cartographies designate graphic practices that seek to register and visualize how affective qualities emerge along spatial itineraries and lived sequences. Because atmosphere is a broad concept,<sup>31</sup> defined here as the ensemble of affective meanings that characterize a place and allow us to resonate with and attune to it,<sup>32</sup> the following overview builds on an interdisciplinary body of literature, including drawing-based investigations that, even when they do not explicitly adopt this terminology, address atmospheric questions across multiple scales, from metropolitan landscapes to interior settings.

At the urban level, the intellectual lineage of this approach can be traced back to psychogeographic theory and practice.<sup>33</sup> Psychogeography, originating within the Situationist International movement in the 1950s, emphasized the relationship between geographical environments and psychological states; it introduced a way of charting lived itineraries (“drifts,” or *dérives* in French) by observing how people walk through and dwell within the urban fabric, whether as longtime residents or temporary visitors.<sup>34</sup> These experiential patterns are rooted in *unités d’ambiance*, zones perceived as having a “particularly intense urban atmosphere,”<sup>35</sup> and can contribute “to clarifying certain wanderings that express not subordination to randomness but complete insubordination to habitual influences,”<sup>36</sup> thereby helping to elucidate instinctive affective preferences that precede socially mediated or normatively codified responses.

Contemporary practitioners of psychogeographic mapping have renewed and broadened these premises.<sup>37</sup> They seek inventive ways to record individuals’ distinctive sensory and emotional connections to place, revitalizing a long-standing tradition of creative cartography and extending it through newer media, including film-based techniques.<sup>38</sup> By foregrounding subjectivity and questioning the presumed neutrality of official geographical data, their work poses a central inquiry: what

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31. Canepa, E. *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Milan and Udine: Mimesis International, 2022.

32. *Resonance* refers to the body’s immediate, pre-reflective capacity to grasp the affective qualities of a spatial situation, while *attunement* describes the situated process by which one becomes more or less attuned to these qualities in relation to their dispositions, intentions, experiences, and constraints.

33. Bruno, G. *Atlas of Emotions*. London and New York, NY: Verso, 2002.

34. Debord, G. “Theory of the *Dérive*.” In K Knabb (ed.) (2006), 62-66, *Situationist International Anthology: Revised and Expanded Edition*. Berkeley, CA: Bureau of Public Secrets, 1958.

35. Sadler S (1999) *The Situationist City*. Cambridge, MA: MIT Press.

36. Debord, G. “Introduction to a Critique of Urban Geography.” In K Knabb (ed.) (2006), 8-12, *Situationist International Anthology: Revised and Expanded Edition*. Berkeley, CA: Bureau of Public Secrets, 1955.

37. D’Ignazio, C. “Art-Machines, Body-Ovens and Map-Recipes: Entries for a Psychogeographic Dictionary.” *Cartographic Perspectives* 53 (2006): 24-40.

38. Harmon, K. *You Are Here: Personal Geographies and Other Maps of the Imagination*. New York, NY: Princeton Architectural Press, 2004; Singleton, A. “Urban Research in Film Using Walking Tours and Psychogeographic Approaches.” *Visual Studies* 39, no. 1-2 (2024): 184-195.

defines a city, and what conveys its essence? This intimate, narrative-driven approach, in which personal stories become a lens for interpreting urban identity, appears, for instance, in Becky Cooper's *Mapping Manhattan*.<sup>39</sup> The project, inscribed within New York's overdocumented visual canon,<sup>40</sup> reframes the city through the memories and emotions of its inhabitants. Cooper crafted schematic maps of Manhattan and distributed them to hundreds of strangers across the borough, inviting participants to depict their own representations of the city and return the annotated maps. The resulting collection reveals a remarkable spectrum of urban experience, articulated through deeply personal reflections that cannot be fully accommodated by established cartographic frameworks: the maps display a wide range of informal graphic languages, combining color sketches, black-and-white diagrams, pictorial images, handwritten texts, and symbolic marks — frequently eschewing legends and standardized conventions.

Increasing expertise in atmospheric cartography entails fine-tuning the ways in which environmental cues are encoded and conveyed, together with inner feedback and bodily sensations. This process enriches the visual palimpsest with details drawn from complementary sensory domains, echoing the inherently multisensory character of atmospheric epiphanies,<sup>41</sup> which extend beyond the five Aristotelian senses to involve sensations particularly salient for architectural experience, such as “orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination.”<sup>42</sup> When approached from their sensory foundations, atmospheric mappings thus expand beyond sight to engage olfactory, tactile, auditory, and thermal dimensions, giving rise to layered representations in the form of smellscapes, texturescapes, soundscapes, and heatscapes. An overview of contemporary sense-based cartography<sup>43</sup> shows that sound and smell are currently far more studied than touch and taste, while also pointing to the potential of place-specific mapping investigations anchored in alternative perceptual modalities, mainly thermoperception and proprioception<sup>44</sup>.

An illustrative sense-by-sense example is provided by the sensorial cartographies elaborated by architect Ana Mombiedro in collaboration with Teresa Munilla to investigate domestic realms, whether existing or designed.<sup>45</sup> In their

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39. Cooper, B. *Mapping Manhattan: A Love (and Sometimes Hate) Story in Maps by 75 New Yorkers*. New York, NY: Abrams, 2013.

40. Cohen, P. E., and R. T. Augustyn. *Manhattan in Maps, 1527-2014*. North Chelmsford, MA: Courier Corporation, 2014.

41. Pallasmaa, J. “An Architecture of the Seven Senses.” *A+U: Architecture and Urbanism* 7(Questions of Perception: Phenomenology of Architecture) (1994): 27-37; Spence, C. “Experimental Atmospheric: A Multi-Sensory Perspective.” *Qualitative Market Research: An International Journal* 25, no. 5 (2022): 662-673.

42. Pallasmaa, J. “Space, Place and Atmosphere: Emotion and Peripheral Perception in Architectural Experience.” *Lebenswelt: Aesthetics and Philosophy of Experience* 4, no. 1 (2014): 230-245.

43. McLean, K. “Sensory Maps.” In A Kobayashi (ed.), 153-168, *International Encyclopedia of Human Geography: Second Edition*. Amsterdam: Elsevier, 2019.

44. Proprioception refers to the body's sense of position, balance, movement, and orientation in space, allowing us to perceive how we stand, navigate, and act without relying on vision (for a brief introduction for designers, see Leandri, 2023).

45. Mombiedro, A. *Espacio, cuerpo y mente*. Madrid: Fundación Arquia, 2024.

work, sensory modalities are addressed one at a time, enabling a focused reading of distinct sensory registers within the broader atmospheric field. These mappings translate atmospheric perception into point-cloud configurations that overlap with wireframe architectural plans or axonometric views. Through the spatial arrangement, density distribution, and chromatic variation of points, they indicate the source, intensity, and specificity of sensations perceived in a given place and at a given moment. Olfactory notes, tactile qualities, sonic patterns, and thermal fluctuations acquire a graphic consistency and analytical relevance comparable to that traditionally reserved for visual elements,<sup>46</sup> becoming integral components of spatial inquiry.

To further advance the collection, interpretation, and communication of visually imperceptible sensory data that contribute to the articulation of overall atmospheric unity, other scholars isolate and foreground overlooked senses through integrative interfaces that complement maps. Olfactory information, for instance, can be conveyed through smells themselves, as in bottled scents and scratch-and-sniff surfaces, or visualized via data-driven tactile forms.<sup>47</sup> This approach is exemplified by the work of artist and designer Kate McLean, whose research focuses on environmental smells, including episodic and involuntary ones. Drawing on a range of media, such as watercolor, digital graphics, animation, and three-dimensional maquette-making, she documents dominant odors and samples their essences in vials, which are embedded within scent diffusers positioned beneath the cartographic support, thereby producing a more immersive and interactive olfactory portrait. Recognizing that smells can trigger emotions and memories that underpin a place's identity, her investigation moves beyond individual experience to embrace a collective horizon, while enabling a systematic comparison of smellscape over time in relation to contingent conditions, particularly weather. This awareness-raising practice seeks to foster deeper engagement with smell as a meaningful component of spatial analysis and design,<sup>48</sup> aligning with a broader critical discourse that has gained momentum over the past decades,<sup>49</sup> questioning the long-standing prioritization of visual experience in modern architectural-urban thinking and its resulting manifestations of sensory impoverishment — a tendency that has intensified in the contemporary condition of digitally mediated perception.<sup>50</sup>

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46. Canepa, E. "Spazio, corpo e percezione: Il disegno come strumento di rappresentazione e analisi dell'immisurabile in architettura." *GUD (Genova University Design): A Magazine about Architecture, Design and City* s.i. (IDEA — Innovation Design Application 2025 edition: Conference Proceedings) (2025): 151-166.

47. McLean, K. "Sensory Maps." In A Kobayashi (ed.), 153-168, *International Encyclopedia of Human Geography: Second Edition*. Amsterdam: Elsevier, 2019.

48. McLean, K. "Communicating and Mediating Smellscape: The Design and Exposition of Olfactory Mappings." In V Henshaw, K McLean, D Medway, C Perkins, G Warnaby (ed.), 67-77, *Designing with Smell: Practices, Techniques and Challenges*. Abingdon and New York, NY: Routledge, 2017.

49. Sennett, R. *Flesh and Stone: The Body and the City in Western Civilization*. London and New York, NY: WW Norton and Company, 1994; Pallasmaa, J. *The Eyes of the Skin: Architecture and the Senses*. Winterbourne: Academy Editions, 1996.

50. Stehlíková, T. *Exiled from Our Bodies: How to Come Back to Our Senses*. Abingdon and New York, NY: Routledge, 2026.

To complete this framework, another criterion shaping the repertoire of techniques available in emotional-sensory spatial mapping concerns the observational standpoint, encompassing both first-person perspectives rooted in lived experience and third-person approaches based on externalized data-driven capture. These methods extend from slow, reflective practices, such as analog illustrations sketched in situ,<sup>51</sup> to digital visualizations associated with quantified-self movements,<sup>52</sup> in which technological layers orchestrate the tracking, measurement, and even augmentation of nonconscious responses to the environment.

Social media analysis constitutes an additional methodological frontier, allowing for retrospective forms of emotional cartography by drawing on user-generated content (images, captions, and posts), affective engagement (likes, shares, and interactions), and location-based information (geotags and metadata); at the same time, such strategies require careful interpretation, as social media dynamics tend to encourage the performance and amplification of affective expressions rather than intimate introspection or empathic attunement.<sup>53</sup> Hybrid modalities that combine multiple data sources can further expand the analytical possibilities of this field, alongside audio-visual ethnographic explorations that introduce more-than-representational and integrated multisensory ways of rendering the lifeworld, enabling researchers to animate and study atmospheres from innovative perspectives.<sup>54</sup>

When cartographic methods shift from representation toward experiential enactment, immersive cartography emerges as a performative extension of these approaches.<sup>55</sup> By situating sensory information within spatially and bodily engaging arrangements, through installations, interactive media, or mixed-reality interfaces, immersive cartographic practices allow atmospheric qualities to be felt and not merely observed. In doing so, they foreground the performative and experiential dimensions of cartography, reinforcing the capacity of atmospheric data to express affective intensity, spatial coherence, and embodied meaning.

In summary, representations crafted through atmospheric cartography convey a highly subjective and situated account of experience, generating multiple narratives of the same existing site or imaginary project. On the one hand, they advance a view of the world as individually constructed;<sup>56</sup> promote and share embodied forms of understanding, for instance by bringing together the creative

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51. Cardoso, T. A. "To Know as You Draw: Exploring the City through Drawing." *Drawing: Research, Theory, Practice* 6, no. 1 (2021): 99-115.

52. Stals, S., M. Smyth, and O. Mival. "Capturing, Exploring, and Sharing People's Emotional Bond with Places in the City Using Emotion Maps." *Airea: Arts and Interdisciplinary Research* 1, no. 1 (2018): 47-62.

53. Caquard, S., and A. Griffin. "Mapping Emotional Cartography." *Cartographic Perspectives* 91 (2018): 4-16.

54. Vanini, P. (Ed.) *The Routledge International Handbook of Ethnographic Film and Video*. Abingdon and New York, NY: Routledge, 2020; Vanini, P. (Ed.) *The Routledge International Handbook of Sensory Ethnography*. Abingdon and New York, NY: Routledge, 2024.

55. Rousell, D. "A Map You Can Walk Into: Immersive Cartography and the Speculative Potentials of Data." *Qualitative Inquiry* 27, no. 5 (2020): 580-597.

56. McLean, K. "Sensory Maps." In A Kobayashi (ed.), 153-168, *International Encyclopedia of Human Geography: Second Edition*. Amsterdam: Elsevier, 2019.

potential of drawing and walking in order to nurture spatial awareness;<sup>57</sup> and reinstate the body and its affective-sensory resonances at the center of architectural drawing, countering a prolonged and widespread pattern of marginalization,<sup>58</sup> even when embodiment is not explicitly thematized. The body, as mobilized by the researcher or architect, becomes an instrument of inquiry, functioning as an agent of experience catalysis, meaning making, and knowledge production.

On the other hand, these representations remain largely exploratory, form-oriented, and methodologically underdeveloped, which limits their applicability and generalizability. They are also prone to approximation, given the difficulty of adequately characterizing emotions, correlating them to spatial conditions, and ensuring their intelligibility for those without first-person exposure; to oversimplification, as they often fail to integrate relational, intersubjective, and temporal dynamics; and to reductionism, for instance when they focus on artificially isolated Aristotelian senses. Reliance on retrospective accounts and mnemonic reconstructions leaves these practices vulnerable to recall biases and post hoc rationalizations of affective experience, while their creative demands may elicit hesitation or resistance, particularly among individuals lacking artistic confidence or prior familiarity with (hand)drawing. These tensions provide a productive ground for advancing more effective forms of atmospheric cartography, attuned to the urgency of developing robust representational strategies for atmospheric phenomena, capable of refining the theoretical scaffolding and testing its implications in design practice.

## Methodology

### Atmospheric Tableaux

Complementing the sequential and experiential logic of atmospheric cartography, which constructs narrative chains of situated moments along a path, it is possible to outline a second approach aimed at capturing the atmospheric potential of specific spatial frames. Rather than documenting lived episodes, this method focuses on the elaboration of *atmospheric tableaux*, each centred on a delimited portion of the city, a landscape view, or an interior setting, and exploring its expressive articulations across a nuanced spectrum of affective options.

While emotional mappings are grounded in a phenomenological and first-person orientation, atmospheric tableaux adopt a more projective and compositional stance. The selected frame is treated as a generative unit whose atmospheric character can be modulated through variations in features such as light, materiality, activity rhythm, and sensory density — namely, those factors commonly referred to

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57. Bogdanova, V., I. Aula, and M. Masoodian. “Spoken Walking-Drawings: Workshop on Weaving Visual Voices into Dialogic Artifacts.” In S Poole, D Schrire, D Valisena (ed.), 33-45, *Mobile Heritage: Walking and the Environment through Future and Historical Perspectives* (Hanaholmen, Finland: 16-19 September 2024). One by Walking, 2025.

58. Imrie, R. “Architects’ Conceptions of the Human Body.” *Environment and Planning D: Society and Space* 21, no. 1 (2003): 47-65.

as *generators of atmosphere* since Gernot Böhme introduced and theorized the concept in his influential work on aesthetics, where atmosphere occupies a central position.<sup>59</sup> Architectural generators embrace the set of spatial details, environmental conditions, and their mutual interactions that architects deliberately compose to stage an intended atmospheric performance, regardless of how future occupants may ultimately experience it.<sup>60</sup> The word “generator” emphasizes the enactive existence of affective affordances<sup>61</sup> within architectural substance, underscoring the idea that atmospheric qualities are not merely representational effects but emerge through the active coupling of material configurations and embodied perceptions. One of the most widely cited formulations of atmospheric generators is suggested by Peter Zumthor’s list in his book-manifesto *Atmospheres*,<sup>62</sup> whose publication has been acknowledged as a key catalyst of the contemporary atmospheric turn in architecture.<sup>63</sup>

By articulating the latent possibilities of a space rather than recording its contingent experiences, atmospheric tableaux provide a tool for investigating how different spatial arrangements may elicit distinct affective dispositions, thereby supporting a more explicitly design-oriented understanding of atmospheric dynamics. Learning how to think atmospherically becomes a way of perceiving, sharing, and conceiving architecture.<sup>64</sup> In these terms, three crucial questions arise: *how does a space make us feel? How can we recognize, articulate, and communicate such affective states? And how can an emotionally attuned reading of architectural experience inform our design sensibility?*

The first challenge lies in accepting that architecture, although an omnipresent, necessary, immersive, multisensory, and affect-laden experience, rarely comes to

59. Böhme, G. “Atmosphere as Mindful Physical Presence in Space.” *OASE: Journal for Architecture* 91(Building Atmosphere) (2013): 21-32; Böhme, G. “The Presence of Living Bodies in Space.” In AC Engels-Schwarzpaul (ed.) (2017), 81-95, *Atmospheric Architectures: The Aesthetics of Felt Spaces*. London and New York, NY: Bloomsbury, 2006.

60. Canepa, E. “The Atmospheric Equation and the Weight of Architectural Generators.” In E Canepa, B Condia (ed.), 18-55, *Generators of Architectural Atmosphere*. Manhattan, KS: New Prairie Press, 2022; Canepa, E., and B. Condia. “On Generating Domestic Atmospheres Which Nurture Our Bodies and Moods.” In K Güler (ed.), 187-204, *Transforming Issues in Housing Design*. Hoboken, NJ: John Wiley and Sons, 2024.

61. Affective affordances indicate the capacity of spatial configurations to evoke emotional resonance, as distinct from Gibsonian sensorimotor affordances that primarily trigger actionable bodily responses (Arbib & Griffero, 2023).

62. Peter Zumthor identifies twelve generators of atmosphere: the body of architecture; the compatibility of materials; the sound of a space; the temperature of a space; surrounding objects; the balance between composure and seduction; the tension between interior and exterior; levels of intimacy; light on things; architecture as a setting for human life; coherence; and, finally, beautiful form. Zumthor, P. *Atmospheres: Architectural Environments. Surrounding Objects*. Basel: Birkhäuser, 2006.

63. Paretì, G. *Il paesaggio tra l'ordine e il corpo*. Pisa: Edizioni ETS, 2021; Canepa, E. *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Milan and Udine: Mimesis International, 2022.

64. Canepa, E. “An Essential Vocabulary of Atmospheric Architecture: Experiencing, Understanding, and Narrating Kansas State’s Beach Museum of Art.” In E Canepa, B Condia, M Wynne (ed.), 276-349, *Atmosphere(s) for Architects: Between Phenomenology and Cognition*. Manhattan, KS: New Prairie Press, 2023.

the foreground of perception. Its affective potential is inherently more diffuse and understated than that of other aesthetic practices such as art, theater, or music, because it unfolds through continuous and prolonged exposure.<sup>65</sup> As a result, architecture's affective influence is diluted by habitual familiarity and absorbed by practical demands, slipping below the threshold of reflective awareness.<sup>66</sup> For this reason, the investigation of architectural atmospheres often benefits from focusing on circumscribed episodes, situations, or spaces that condense and intensify affective qualities into remarkably salient and compelling impressions, regardless of their positive or negative valence. This approach recalls the Situationist construct of *unités d'ambiance*, defined as urban fragments of particularly charged atmosphere, as discussed in the previous section. It is at this point that the notion of *aura* assumes relevance.

While at times conflated with atmosphere,<sup>67</sup> *aura* introduces a distinct nuance. Even at a semantic level, the affinity between the terms “aura” and “atmosphere,” evident in their shared etymological field of *air/aura/atmo(sphere)*, reveals their close conceptual proximity. Yet *aura* designates a condition of heightened intensity and perceptual density, generating a threshold effect that brings atmospheric experience into relief. In this sense, *aura* shapes a condition in which the otherwise tacit essence of atmosphere becomes, at a given moment, perceptually explicit, pronounced, and engaging. This interpretation aligns with Walter Benjamin's articulation of *aura* in his critical essay *The Work of Art in the Age of Mechanical Reproduction*,<sup>68</sup> where the notion refers to the qualitative uniqueness of a phenomenon, to its here-and-now authenticity and authority, alongside its capacity to evoke emotion and command attention. Although originally formulated in relation to works of art, Benjamin's concept can be fruitfully reframed in spatial terms, not as an intrinsic property of objects but as an experiential configuration in which affective involvement and perceptual salience converge. An architectural refinement of this paradigm is suggested by Gernot Böhme, who emphasizes the spatiotemporal and embodied character of *aura*, noting that, in Benjamin's sense, it is “something which flows forth spatially, almost like a breath or a haze — precisely an atmosphere”. Perceiving *aura*, Böhme argues, entails absorbing it into one's bodily state, as what is encountered is “an indeterminate, spatially extended quality of feeling.”<sup>69</sup>

However, the intensity of such aesthetic experience entails a distinctive mode of perception that resists full verbal articulation. In attempting to engage

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65. Pallasmaa, J. “Hapticity and Time: Notes on Fragile Architecture.” *The Architectural Review* 1239 (2000): 78-84.

66. Jelić, A., G. Tieri, F. De Matteis, F. Babiloni, and G. Vecchiato. “The Enactive Approach to Architectural Experience: A Neurophysiological Perspective on Embodiment, Motivation, and Affordances.” *Frontiers in Psychology* 7 (2016): 481.

67. Canepa, E. *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Milan and Udine: Mimesis International, 2022.

68. Benjamin, W. “The Work of Art in the Age of Mechanical Reproduction.” In H. Arendt (ed.) (1968), 217-251, *Illuminations: Essays and Reflections*. New York, NY: Schocken Books, 1936.

69. Böhme, G. “Atmosphere as the Fundamental Concept of a New Aesthetics.” *Thesis Eleven* 36, no. 1 (1993): 113-126.

linguistically with the phenomenon of aura, two opposing tendencies emerge:<sup>70</sup> non-sensory language, when mobilized to communicate sensory perception, inevitably abstracts and reduces the singularity of lived experience; at the same time, the act of verbal construction, by organizing and rendering perception intelligible, can also generate, extend, and multiply experiential meaning.

By identifying moments of heightened intensity and perceptual density, the paradigm of aura offers a crucial bridge toward the (partial) operationalization of atmospheric experience, helping us to clarify how we feel space and how we can articulate its affective reverberations. Yet describing our emotions is intrinsically complex: as dynamic, situated, and embodied processes, they have been addressed in psychology through a wide range of theoretical frameworks, from categorical taxonomies to dimensional and constructivist accounts.<sup>71</sup> Among these, dimensional models have proven particularly effective in capturing the continuous and graded nature of affective experience. One of the most validated and influential approaches is the circumplex model of affect,<sup>72</sup> which conceptualizes emotions as points within a two-dimensional spectrum, commonly visualized as a Cartesian plane with arousal and valence varying along two perpendicular axes (see Figure 1). Briefly, *arousal* indicates the level of physiological and subjective intensity associated with an emotional state, regardless of whether it is positive or negative, while *valence* refers to its qualitative tone, ranging from pleasant to unpleasant. As analytically independent dimensions, the precise relationship between arousal and valence remains an open empirical question,<sup>73</sup> but their combination provides a useful basis for mapping and comparing emotional states. A high level of arousal does not necessarily correspond to a pleasantly valenced experience: intense activation may be linked to excitement or fascination when paired with positive valence, but also to anxiety or distress when coupled with negative valence. Conversely, low arousal may support experiences of calm and relaxation under positive valence, or boredom and indifference when valence is negative.

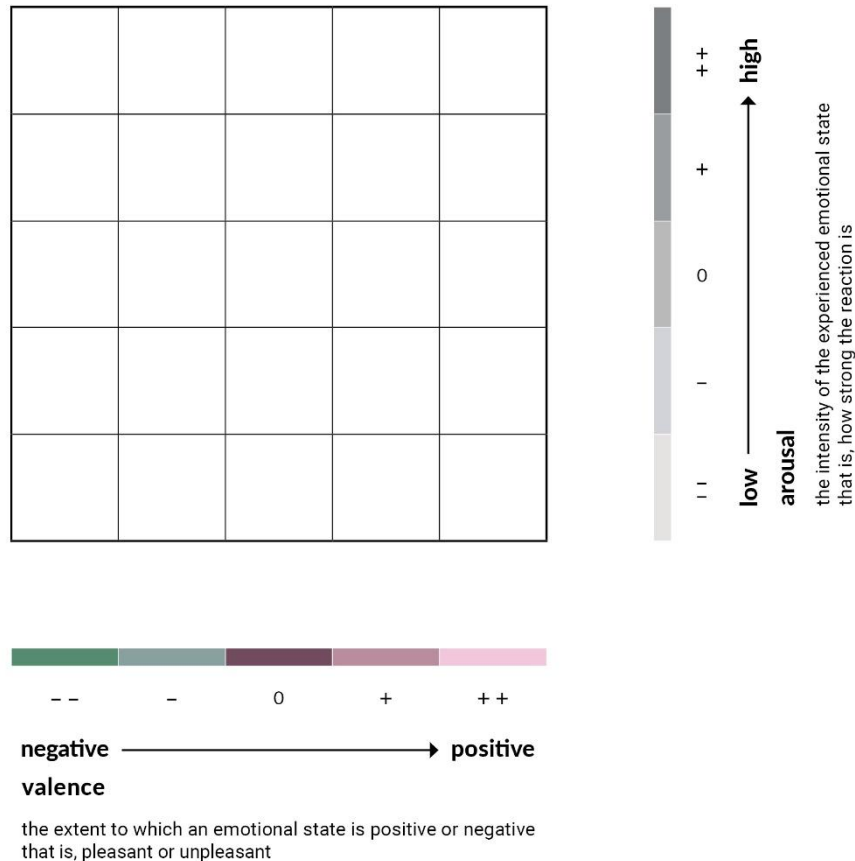
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70. Rauh, A. *Concerning Astonishing Atmospheres: Aisthesis, Aura, and Atmospheric Portfolio*. Milan and Udine: Mimesis International, 2018.

71. Scarantino, A. (Ed.) *Emotion Theory: The Routledge Comprehensive Guide. Volume I: History, Contemporary Theories, and Key Elements*. Abingdon and New York, NY: Routledge, 2025; Scarantino, A. (Ed.) *Emotion Theory: The Routledge Comprehensive Guide. Volume II: Theories of Specific Emotions and Major Theoretical Challenges*. Abingdon and New York, NY: Routledge, 2025.

72. Russell, J. A. "A Circumplex Model of Affect." *Journal of Personality and Social Psychology* 39, no. 6 (1980): 1161-1178; Posner, J., J. A. Russell, and B. S. Peterson. "The Circumplex Model of Affect: An Integrative Approach to Affective Neuroscience, Cognitive Development, and Psychopathology." *Development and Psychopathology* 17, no. 3 (2005): 715-734.

73. Kuppens, P., F. Tuerlinckx, J. A. Russell, and L. F. Barrett. "The Relation between Valence and Arousal in Subjective Experience." *Psychological Bulletin* 139, no. 4 (2013): 917-940; Colombetti, G., and P. Kuppens. "How Should We Understand Valence, Arousal, and Their Relation?" In A. Scarantino (ed.), 599-620, *Emotion Theory: The Routledge Comprehensive Guide. Volume I: History, Contemporary Theories, and Key Elements*. Abingdon and New York, NY: Routledge, 2025.



**Figure 1.** A graphic reinterpretation of the circumplex model of affect

See Russell (1980) for the original formulation and the distribution of affective states along the arousal and valence dimensions.

The perceptual “threshold effect” associated with aura can thus be interpreted as a form of emotional activation, marked by a sudden grasp of attention and heightened bodily involvement, closely aligning with the notion of arousal. At the same time, accounting for whether such activation is experienced as inviting or unsettling, comforting or disturbing, open or oppressive, requires the complementary dimension of valence. Together, arousal and valence allow us to address the perceived intensity and the qualitative tone of architectural experience. A growing body of literature shows that dimensional models of affect have been tested in architectural research, including studies on urban experiences,<sup>74</sup> domestic interiors,<sup>75</sup> virtual

74. Piga, B. E. A., N. Rainisio, G. Stancato, and M. Boffi. “Mapping the In-Motion Emotional Urban Experiences: An Evidence-Based Method.” *Sustainability* 15, no. 10 (2023): 7963.

75. Llinares, C., M. L. Nolé, M. Pérez-Martínez, R. Barranco-Merino, and J. L. Higuera-Trujillo. “An Exploratory Neuroarchitecture Study: Emotional Responses to Residential Spaces Using Psychological and Physiological Indicators.” *Vitruvio: International Journal of Architectural Technology and Sustainability* 10, no. 1 (2025): 1-18.

environments,<sup>76</sup> databases of affect-laden spatial stimuli,<sup>77</sup> as well as investigations explicitly focused on atmospheric perception.<sup>78</sup> Against this background, arousal and valence serve as a minimal yet robust framework for translating affect-based constructs, firmly established in psychology, into operational drivers for crafting a qualitative syntax capable of characterizing and situating emotional states.

A prospective language of atmosphere can begin by defining a set of atmospheric generators, for instance drawing on Zumthor's twelve-item list,<sup>79</sup> and articulating them within the arousal-valence space. In this way, the description of an atmospheric condition such as ambient temperature moves beyond neutral designation: when marked by a high level of subjective arousal, the overall atmosphere is characterized as "warm" or "cold," depending on its positive or negative valence. Likewise, variations in lighting qualities can be examined along the same continuum: when light is associated with elevated arousal, the resulting atmosphere is felt as "vibrant," whereas lower levels of activation correspond to a "soft" atmosphere, with valence further qualifying these states as "comforting" or "oppressive." Traversing the graded arousal-valence spectrum thus promotes finer expressive granularity, encouraging individual and shared perceptual narratives.

Still, the two affect-structuring dimensions pose different interpretative challenges. While valence, understood as the pleasant or unpleasant orientation of an experience, is relatively accessible through introspective judgment (e.g., through expressions of liking or disliking), arousal proves more elusive to assess, particularly when it emerges from spatially mediated and diffuse dynamics. Moreover, identifying adjectives able to convey how a space feels atmospherically is neither immediate nor univocal, since such descriptions cannot rely on the straightforward transposition of emotion labels validated in psychology,<sup>80</sup> such as "relaxed-stimulated" for arousal or "happy-unhappy" for valence, which do not

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76. Presti, P., D. Ruzzon, P. Avanzini, F. Caruana, G. Rizzolatti, and G. Vecchiato. "Measuring Arousal and Valence Generated by the Dynamic Experience of Architectural Forms in Virtual Environments." *Scientific Reports* 12, no. 1 (2022): 13376.

77. Gregorians, L., P. F. Velasco, F. Zisch, and H. J. Spiers. "Architectural Experience: Clarifying its Central Components and their Relation to Core Affect with a Set of First-Person-View Videos." *Journal of Environmental Psychology* 82 (2022): 101841.

78. Canepa, E., V. Scelsi, A. Fassio, L. Avanzino, G. Lagravinese, C. Chiorri. "Atmospheres: Feeling Architecture by Emotions. Preliminary Neuroscientific Insights on Atmospheric Perception in Architecture." *Ambiances: International Journal of Sensory Environment, Architecture, and Urban Space* 5 (Phenomenographies: Describing Urban and Architectural Atmospheres) (2019); Canepa, E., K. Güler, and B. Condia. "The Emotional Atmospheres ATLAS: A Database of Architectural Experiences Surveyed through Arousal and Valence." In the Environmental Design Research Association — EDRA (ed.), 358, *Environment and Health. Global/Local Challenges and Actions: EDRA 54<sup>th</sup> Conference Proceedings* (Mexico City, Mexico: 20-23 June 2023). Washington, DC: EDRA, 2024; Canepa, E., Z. Djebbara, K. Güler, L. Andrighetto, I. Schiavetti, V. Scelsi, A. Jelić, and B. Condia. "Architectural Atmospheres, Priming Effects, and First Impressions: A Multi-Perspective Approach Integrating Self-Report Assessments and Physiological Responses." *Architectural Science Review* 68, no. 5 (2025): 379-391.

79. Mace, V. "Sensing the Urban Interior." In [in]arch (ed.), 183-193, *Interiority and Interior Architecture: [in]arch 2014 Conference Proceedings* (Depok, Indonesia: 10-11 September 2014). Department of Architecture, Universitas Indonesia, 2014.

80. Mehrabian, A., and J. A. Russell. *An Approach to Environmental Psychology*. Cambridge, MA: MIT Press, 1974.

translate directly into spatial experience.<sup>81</sup> This calls for the development of a situated vocabulary that mediates sensory impressions, affective resonances, and spatial mechanisms; in response to these difficulties of verbal articulation, drawing-based tools such as atmospheric tableaux become relevant, as they externalize affective qualities into visuospatial constructs.

### An Atmospheric Design Workshop

Building on these premises, and in order to test the potential of atmospheric tableaux for fostering an affectively attuned understanding of architectural experience capable of informing design sensibility, the author conducted a workshop at the Faculty of Architecture of the Academy of Fine Arts in Gdańsk, Poland.<sup>82</sup> After selecting a case study within the city, chosen for its distinctive aura, students investigated how its architectural elements and atmospheric qualities could be multisensorially manipulated to nurture its affective presence and identity. The workshop aimed to give form to what is otherwise invisible and ineffable through the construction of polymorphic kinetic maquettes.

As participants were initially unfamiliar with the principles of atmospherology, understood as the study of affective atmospheres in space, the workshop was preceded by a preparatory phase consisting of targeted readings and an introductory lecture.<sup>83</sup> This step focused on developing a shared conceptual vocabulary rooted in key notions such as *embodiment*, *lived space*, *affordance*, *atmosphere*, *aura*, *resonance* and *attunement*, *emotions* and *feelings*, *arousal* and *valence*, and *atmospheric generators*.<sup>84</sup> The theoretical introduction was followed by a two-hour silent walk through the city center. Although participants were already acquainted with Gdańsk as their place of study, the walk was intended to suspend habitual perception while foregrounding bodily and affective attunement to the urban environment.

Upon returning to the classroom, students were asked to analyze the selected site's atmosphere by tracing its architectural generators in relation to their own body-

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81. Consider, for example, the adjectives associated with the arousal and valence dimensions in the Self-Assessment Manikin (SAM) developed by Margaret M. Bradley and Peter J. Lang (1994), a pictorial assessment technique commonly used to measure the degree of activation and pleasure characterizing a person's affective response to a wide range of stimuli.

82. The intensive design workshop was integrated into the second edition of the *Architecture Workshop Week* (March 3-7, 2025). Organizing committee: Faculty of Architecture, Academy of Fine Arts in Gdańsk (Anna Wejkowska-Lipska, Katarzyna Zawistowska, Agata Ruchlewicz-Dzianach, Kamila Szatanowska). Participants: students from the Interior Architecture and Architecture of Cultural Spaces programs (Anas bin Mohamed Ezzeldin Kenawy Mohamed, Patrycja Gajewska, Agnieszka Glama, Wiktoria Grabowy, Darya Marshalak, Dominika Olewniczak, Kaja Piotrowska, Julia Stępień, Anna Zadroga).

83. Canepa, E. "The Atmospheric Equation and the Weight of Architectural Generators." In E Canepa, B Condia (ed.), 18-55, *Generators of Architectural Atmosphere*. Manhattan, KS: New Prairie Press, 2022; Canepa, E. *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Milan and Udine: Mimesis International, 2022.

84. Canepa, E. "An Essential Vocabulary of Atmospheric Architecture: Experiencing, Understanding, and Narrating Kansas State's Beach Museum of Art." In E Canepa, B Condia, M Wynne (ed.), 276-349, *Atmosphere(s) for Architects: Between Phenomenology and Cognition*. Manhattan, KS: New Prairie Press, 2023.

mind dispositions and personal experiential backgrounds. Supported by photographic and video material (see Figure 2), the task entailed synthesizing the most salient elements shaping the place's auratic identity and articulating them verbally to the instructor, who was not from Gdańsk and was therefore encountering the sites for the first time. Next, each student chose a single image of their project site, framed in a  $20 \times 30$  cm format, to serve as the visual baseline for a series of atmospheric tableaux. Drawing on a previous didactic exercise,<sup>85</sup> students articulated four atmospheric scenarios corresponding to markedly distinct configurations along the arousal-valence continuum: high arousal with positive valence, high arousal with negative valence, low arousal with positive valence, and low arousal with negative valence (see Figures 3-5). They repeatedly tested their hypotheses by asking other students to self-report the depicted atmosphere in terms of felt arousal and valence, thereby assessing whether the design intentions aligned with the effects afforded by the tableaux.



**Figure 2.** Participatory workshop session showing students collectively discussing their case studies

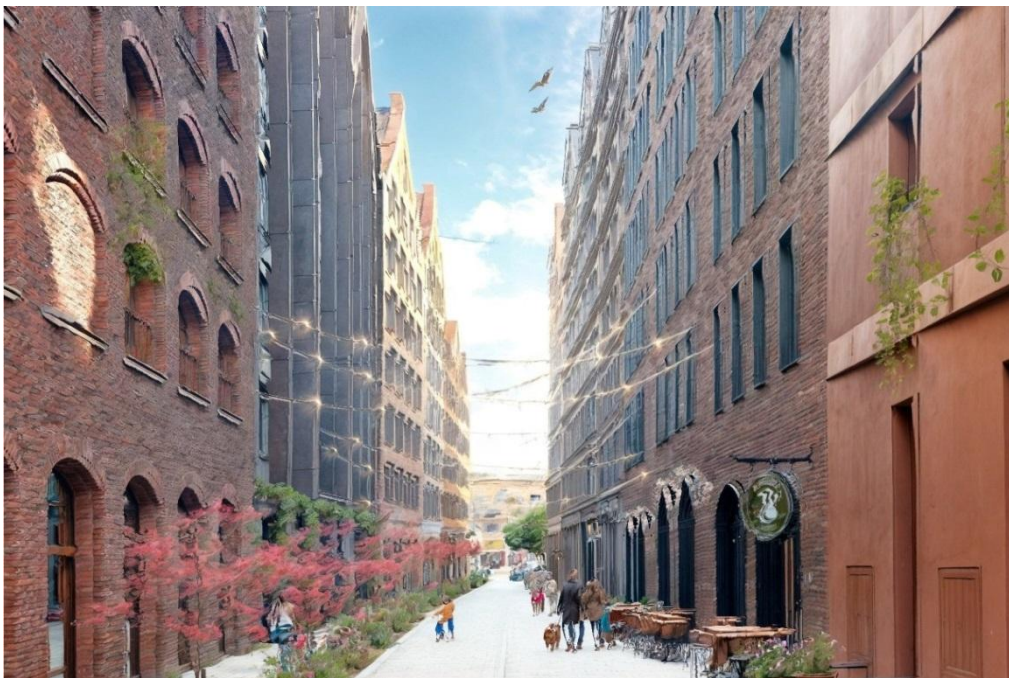
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85. Canepa, E. "Empathic Imagination: Nurturing Architectural Creativity in Video Games and Virtual Reality Simulations." In G Leandri (ed.), 109-127, *Innovation Design Application (IDEA): 2024 Conference Proceedings* (Genoa, Italy: 18 March 2024). Genoa: Genoa University Press, 2024.

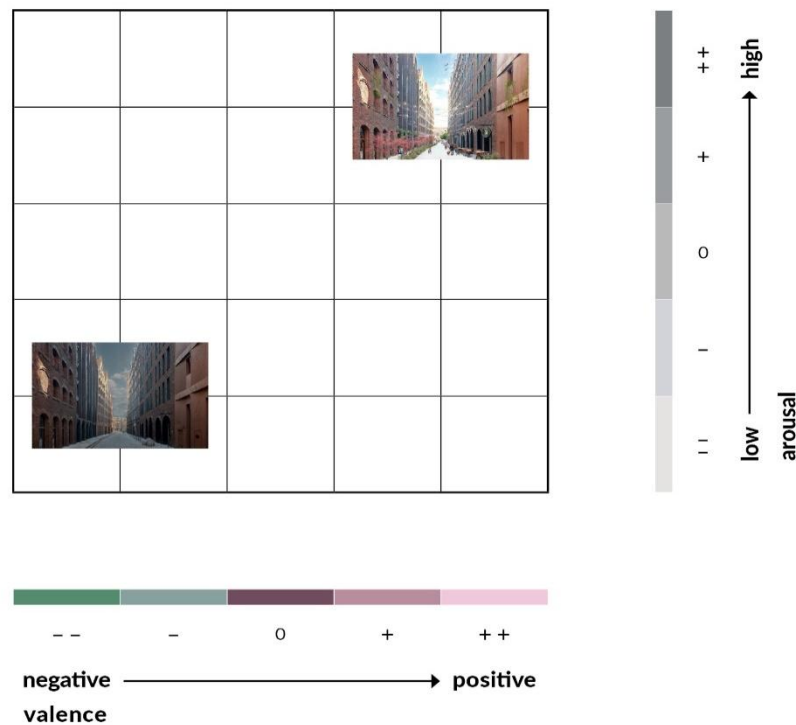
Source: Arkadiusz Staniszewski, 2025.



**Figure 3.** Atmospheric tableau of Basztowa Street on Granary Island, Gdańsk, conveying an affective tone of low arousal and negative valence  
Source: Dominika Olewniczak, 2025.



**Figure 4.** Atmospheric tableau of Basztowa Street on Granary Island, Gdańsk, conveying an affective tone of high arousal and positive valence  
Source: Dominika Olewniczak, 2025.



**Figure 5.** A comparison of two atmospheric tableaux positioned within the arousal-valence spectrum according to the student's intentions and her colleagues' self-reported responses

Yet, because atmospheres are relational and dynamic rather than fixed visual conditions, the tableaux were not conceived as isolated static images alone. To introduce a dimension of perceptual variation and to compensate, at least partially, for the reduced multisensory complexity of graphic representation, the four scenarios were incorporated into small kinetic maquettes that made atmospheric differences emerge through movement and shifting viewpoints. The construction of the maquettes was inspired by the polymorphic and rotating sculptures developed by Yaacov Agam,<sup>86</sup> a pioneering figure in optical and kinetic art. Agam's work is particularly relevant for its investigation of perception as a dynamic and relational process, in which form, color, and movement interact to produce multiple visual states.<sup>87</sup> His invention of the *agamograph*, a technique based on fragmented images mounted on folded supports that reveal different configurations as the viewer's position shifts, provided a formal reference and a conceptual model for translating atmospheric variability into a tangible artifact.

86. Yaacov Agam is a Paris-based artist, born in Rishon-le-Zion, Palestine (now Israel), in 1928. He studied at the Bezalel Academy in Jerusalem and later at the School of Arts and Crafts in Zurich, where he met Sigfried Giedion and Johannes Itten, before moving to Paris in the early 1950s. In 1996, UNESCO awarded him the Jan Amos Comenius Medal for the Agam method, recognizing his contributions to nonverbal visual education for young children.

87. Agam, Y. *Yaacov Agam*. Neuchâtel: Éditions du Griffon, 1962; Solomon, J. J. (Ed.) *Agam: From the 2<sup>nd</sup> to the 3<sup>rd</sup>, into the 4<sup>th</sup> Dimension*. New York, NY and Chicago, IL: Circle Fine Art Press, 1981; Popper, F. (Ed.) *Agam*. New York, NY: Harry N Abrams, 1983.

Accordingly, students designed small-scale kinetic sculptures (approximately 32 cm in height), composed of a rectangular, double-sided frame mounted on a rounded vertical rod and anchored to a base that allowed free rotational movement. The frame housed a sequence of fifteen strips with a triangular cross-section arranged in an accordion-like layout. The maquettes were fabricated using greyboard for the structural components and white cardstock for the folded surfaces, ensuring stability and visual neutrality. Each folded plane hosted a fragment of an atmospheric tableau, so that distinct graphic compositions emerged depending on the angle of observation, generating a controlled morphing effect analogous to Agam's optical works. The four atmospheric tableaux were developed through collage techniques, either digitally (employing Photoshop) or hand-crafted (by assembling cut-outs from photographs or sketches), according to each student's preference. Frontal views tended to condense the atmospheric character into a legible yet partial configuration, while oblique and lateral perspectives progressively disclosed alternative affective variations (see Figure 6). In this way, the act of moving around the object became integral to its interpretation, mirroring the experiential logic of atmospheres as relational, dynamic, and contingent phenomena.

The workshop concluded with a final survey and collective discussion aimed at assessing the extent to which students' design intentions corresponded to the perceived effects of the atmospheric tableaux.



**Figure 6.** *Polymorphic kinetic maquettes accommodating atmospheric tableaux*  
Source: Elisabetta Canepa, 2025.

## Results and Discussion

### Workshop Outcomes and Pedagogical Implications

Overall, the workshop pursued three interconnected objectives: first, to introduce a shared language of atmosphere as a means of broadening architectural understanding beyond a predominantly visual grasp of space; second, to familiarize participants with an interdisciplinary perspective at the intersection of architecture, aesthetics, and cognitive science; and third, to cultivate an atmospheric design sensibility oriented toward the conception of situated projects grounded in emotional engagement and contextual responsiveness. Despite the theoretical ambition informing these objectives, the workshop should be regarded as an exploratory and preliminary exercise rather than as a fully developed validation of the proposed approach. Its aim was to investigate whether a controlled representational device could help students identify, articulate, and manipulate selected atmospheric generators with greater attentiveness to their affective and perceptual effects.

In this sense, the decision to work on the same spatial frame while varying specific generators such as light conditions, material details, and situational cues was deliberately reductive, with certain variations intentionally accentuated in order to better grasp their perceptual implications, building on a widely used methodological strategy already explored in earlier work.<sup>88</sup> The tableaux functioned less as complete representations of atmospheric experience than as interpretative devices through which layered and initially tacit impressions could be translated into visual hypotheses. One significant outcome of the workshop concerned precisely this transition from subjective perception to structured representation: the silent walk activated an embodied and situated engagement with the site, while the subsequent construction of the tableaux required students to select, isolate, and organize the atmospheric qualities they perceived as most salient from Peter Zumthor's twelve-item list, transforming pre-reflective impression into a mediated reformulation of their on-site experience.

The workshop also brought into focus some limitations that should be acknowledged in order to further develop the proposed methodology: first, the students involved had no prior familiarity with the terminology and theoretical framework of atmospherology, which inevitably affected the speed and depth with which they could appropriate such notions; second, the short duration of the

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88. Canepa, E., V. Scelsi, A. Fassio, L. Avanzino, G. Lagravinese, C. Chiorri. "Atmospheres: Feeling Architecture by Emotions. Preliminary Neuroscientific Insights on Atmospheric Perception in Architecture." *Ambiances: International Journal of Sensory Environment, Architecture, and Urban Space* 5 (Phenomenographies: Describing Urban and Architectural Atmospheres) (2019); Canepa, E., K. Güler, and B. Condia. "The Emotional Atmospheres ATLAS: A Database of Architectural Experiences Surveyed through Arousal and Valence." In the Environmental Design Research Association — EDRA (ed.), 358, *Environment and Health. Global/Local Challenges and Actions: EDRA 54<sup>th</sup> Conference Proceedings* (Mexico City, Mexico: 20-23 June 2023). Washington, DC: EDRA, 2024; Canepa, E., Z. Djebbara, K. Güler, L. Andrighetto, I. Schiavetti, V. Scelsi, A. Jelić, and B. Condia. "Architectural Atmospheres, Priming Effects, and First Impressions: A Multi-Perspective Approach Integrating Self-Report Assessments and Physiological Responses." *Architectural Science Review* 68, no. 5 (2025): 379-391.

workshop, conducted over four five-hour sessions, constrained the time available for perceptual training, collective discussion, and graphic experimentation; third, although the workshop was conceptually grounded in a multisensory understanding of atmosphere, its outputs remained predominantly visual, revealing the difficulty of translating non-visual and cross-sensory impressions into representational forms; fourth, despite being informed by psychological literature, the self-reported indicators used by the students in their preliminary ratings were not entirely effective, particularly in capturing arousal, a dimension inherently more ambiguous to assess than valence. As a result, the four atmospheric variations were generally not evenly distributed across the arousal-valence spectrum: some configurations proved too similar to make their differences clearly legible, while others, in an effort to produce stronger contrasts, became overly emphatic and at times somewhat naive in their accentuation of certain generators, often ones that were not strictly architectural.

More fundamentally, the workshop exposed a broader disciplinary issue: architects are seldom taught to cultivate the body as a privileged medium through which architecture is felt and conceived. Some authors, such as the philosopher-architect Sarah Robinson, who was among the first to bring architecture into sustained dialogue with the embodied cognitive science,<sup>89</sup> frame corporeal, emotional, and spatial awareness as a matter of individual disposition, while also suggesting that it may be refined through embodied practices such as meditation.<sup>90</sup> Preliminary research indicates that contemplative techniques can help foster greater emotional granularity and openness to subtle perceptual variations,<sup>91</sup> although this hypothesis has yet to be tested empirically. In parallel, exercises specifically aimed at training architects' visual perception may offer a valuable complement through the incorporation of scientific approaches into design education, as shown by Tiziana Proietti's pedagogical research,<sup>92</sup> which, drawing on the work of the Dutch Benedictine monk and architect Hans van der Laan,<sup>93</sup> develops a methodology for exploring how we perceive and interpret surrounding built space through the embodied coordination of movement and proportion.

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89. Robinson, S., and J. Pallasmaa (Ed.) *Mind in Architecture: Neuroscience, Embodiment, and the Future of Design*. Cambridge, MA: MIT Press, 2015.

90. As discussed in Buondonno, L. "L'emergere della mente nella progettazione architettonica: Corpo, cervello e strumenti digitali. Dialoghi con Sarah Robinson, Bob Condia e Michael Arbib." *GUD (Genova University Design): A Magazine about Architecture, Design and City* 7(Synapse) (2023): 34-39.

91. Wilson-Mendenhall, C. D., and J. D. Dunne. "Cultivating Emotional Granularity." *Frontiers in Psychology* 12 (2021): 703658.

92. Proietti, T., and S. Gepshtein. "Vision Training for Designers." *Architectural Science Review* 68, no. 5 (2025): 433-447.

93. Proietti, T., and K. Biesen. *Hans van der Laan's Instruments of Thought: Proportion, Architecture, Analogy*. Abingdon and New York, NY: Routledge, 2025.

## Conclusions

### Towards a Language of Atmosphere

This paper has argued that architectural atmospheres, while subjective, vague, and elusive, can be meaningfully investigated and communicated through representational practices that engage affect as a spatially situated and embodied phenomenon. Grounded in a critical review of atmospheric cartographies and the experimental development of atmospheric tableaux, drawing-driven techniques have emerged as mediating interfaces aimed at encouraging an emotionally attuned understanding of architectural experience. By proposing the concept of aura as a quality of experience and knowledge that, through a threshold effect, makes atmospheric presence perceptible, and by translating affect-based constructs well established in psychology, such as arousal and valence, into principles informing the drawing process, this research contributes to the articulation of a *language of atmosphere* that bridges phenomenological insight and design expertise. Psychological coordinates do not replace phenomenological accounts but instead provide a minimal descriptive framework capable of making its otherwise elusive qualities more systematically articulable; this approach outlines a situated and exploratory methodology that acknowledges the indeterminacy of atmospheres while rendering their effects inter-observable, comparable, discussable, and potentially designable. The paper thus advocates an affect-oriented architectural sensibility in which atmospheres are treated as relational conditions that may be carefully cultivated, critically examined, and imaginatively projected, moving beyond any understanding of them as ineffable residues or unintended design outcomes.

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