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MULTISENSORY INTERIORS

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REUSE AND REGENERATIVE BEAUTY

Multisensory and Crossmodal Strategies for the Reuse of Abandoned Interiors

Between Fascination, Comfort, and Regeneration

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Multisensory Design, Crossmodal Perception, Abandoned Interiors, Regenerative Reuse, Embodied Experience.

Abstract

Adaptive reuse is increasingly framed as a regenerative practice that extends building lifecycles while responding to environmental responsibility and social well-being. Nevertheless, discussions on the reuse of abandoned interiors still privilege visual aesthetics and technical performance, often overlooking the embodied and multisensory nature of spatial experience.

This article investigates how multisensory and crossmodal design strategies operate between fascination, comfort, and regeneration in abandoned interiors temporarily activated through cultural programmes and installations. A qualitative methodology combines a state-of-the-art literature review, three semi-structured expert interviews, and two empirical cases: Alcova 2025 in Italy, focusing on the Pasino Glasshouses and the former SNIA factory, and *O Tempo das Coisas* at Edifício Virgínia during DW! 2022 in Brazil. The findings indicate that comfort emerges less from sensory minimisation than from crossmodal coherence and temporal orchestration, perceived as a “sensory score” aligned with bodily movement and environmental conditions.

The article proposes a layered analytical framework linking host spatial conditions, multisensory interventions, perceptual mechanisms, experiential outcomes, and critical modulators such as accessibility, sustainability, and the risk of aestheticising decay or accelerating exclusion. The study contributes theoretically by reframing comfort as a multisensory, temporal, and relational phenomenon in adaptive reuse, and practically by offering guidelines for reflective and inclusive multisensory regeneration.

1. Introduction

Adaptive reuse has become a central strategy in contemporary architecture and interior design, responding simultaneously to environmental imperatives, heritage preservation, and changing patterns of use. Reusing abandoned interiors such as obsolete factories, neglected domestic buildings, and disused infrastructures extends the life cycle of existing structures while reducing material waste and embodied carbon. Yet adaptive reuse is not only a technical or environmental operation. It also involves the reconfiguration of memory, atmosphere, and embodied experience. The transformation of abandoned interiors therefore raises not only practical questions about reuse, but also experiential questions about how these spaces are perceived, inhabited, and interpreted.

Most discussions on adaptive reuse continue to privilege visual appearance, architectural preservation, and measurable environmental performance. By contrast, the embodied and multisensory dimensions of reused interiors remain comparatively underexplored.

This limitation is significant because spatial experience is inherently multisensory. Vision, touch, smell, sound, temperature, humidity, and bodily movement are continuously integrated by the body, shaping how environments are understood and remembered (Calvert et al., 2004; Pallasmaa, 2005; Mallgrave, 2013; Spence, 2020). Research on crossmodal correspondences further demonstrates that people systematically associate stimuli from different sensory modalities, producing experiences that are perceived as coherent, intuitive, and comfortable (Spence, 2011).

Comfort, therefore, should not be understood only as ergonomic adequacy or environmental neutrality. In abandoned interiors, it rarely depends on the elimination of irregularity, deterioration, or sensory intensity. Instead, comfort emerges through the interaction between bodies, atmospheres, material traces, and temporal sequences. Patina, residual odours, filtered light, reverberation, humidity, and worn surfaces may initially appear incompatible with comfort. Yet when these conditions are organised coherently, they can contribute to fascination, memorability, and a renewed sense of place.

Abandoned interiors are especially revealing contexts in which to investigate these dynamics. Their atmospheres are often marked by decay, acoustic irregularities, spontaneous vegetation, incomplete surfaces, and traces of former inhabitation. Such environments frequently provoke simultaneous attraction and unease (Jorgensen & Tylecote, 2007; DeSilvey, 2017). On the one hand, they can foster curiosity, reflection, and heightened sensory awareness. On the other hand, they may generate discomfort, uncertainty, or exclusion if they are not critically mediated. Recent discussions in new materialism further suggest that these environments should not be considered passive settings waiting to be transformed. Materials such as rust, humidity, dust, broken glass, vegetation, and deteriorated surfaces actively participate in shaping perception and behaviour (Bennett, 2010). The atmosphere of abandonment therefore emerges not only because designers intervene in space, but also because matter itself continues to act. For this reason, the reuse of abandoned interiors cannot be approached in the same way as the design of new or neutral spaces. These interiors

already possess sensory, material, and affective conditions that must be interpreted, negotiated, and transformed rather than simply replaced. Multisensory and crossmodal strategies are therefore particularly relevant to adaptive reuse because they can mediate between existing traces of abandonment and new experiential possibilities, supporting processes of comfort, fascination, and regeneration.

This perspective is particularly relevant in contemporary cultural programmes and temporary design events, where abandoned interiors are increasingly activated as sites of experimentation and public encounter. Within these contexts, multisensory interventions operate between fascination, comfort, and regeneration. They may foster embodied well-being and restorative perception, but they may also aestheticise abandonment, reinforce sensory exclusion, or contribute to processes of socio-spatial revalorisation. Although literature on atmosphere, multisensory architecture, adaptive reuse, and material agency has expanded in recent years, few studies examine how multisensory and crossmodal strategies specifically contribute to comfort in abandoned interiors, or how these strategies operate between fascination, regeneration, accessibility, and socio-spatial tension.

This article starts from the hypothesis that comfort in abandoned interiors does not result from the suppression of sensory complexity, but from the coherent and temporally organised interaction between existing material conditions and multisensory interventions. In other words, comfort emerges not despite deterioration and sensory intensity, but through them, when they are integrated into a legible crossmodal experience.

To investigate this hypothesis, the article analyses two temporary activations of abandoned interiors: Alcova 2025 in Varedo, in the Milan metropolitan area, Italy, and *O Tempo das Coisas*, presented at Edifício Virgínia during DW! 2022 in São Paulo, Brazil. These cases are examined through a qualitative methodology combining literature review, semi-structured expert interviews, and sensory observation. The study addresses the following research questions:

RQ1. *How do multisensory and crossmodal design strategies contribute to comfort in reused abandoned interiors?*

RQ2. *How does fascination with abandoned spaces interact with multisensory experience to support or hinder regenerative perception?*

RQ3. *Which tensions emerge regarding accessibility, sustainability, and the aestheticisation of decay?*

By addressing these questions, the article contributes to current debates on multisensory interiors and adaptive reuse in two ways. Theoretically, it reframes comfort as a multisensory, temporal, and relational phenomenon rather than as the absence of disturbance. Practically, it proposes an analytical framework that may support more reflective, inclusive, and critically regenerative approaches to the reuse of abandoned interiors.

2. Methodology

This research investigates multisensory comfort and regenerative perception in abandoned interiors through a qualitative and interpretative approach. Because the study addresses embodied experience, atmosphere, and crossmodal relations,

it requires methods capable of capturing meanings, sensory qualities, and spatial narratives rather than measurable variables alone. For this reason, the methodology combines a literature review, semi-structured interviews, and case study observation, allowing the comparison of theoretical perspectives, expert knowledge, and empirical evidence.

2.1. Research Design

The study adopts a qualitative and exploratory-descriptive design based on methodological triangulation. Triangulation was selected because it enables the integration of different sources of evidence and strengthens the credibility of the analysis through the comparison of convergences and divergences across theory, interviews, and observed cases (Flick, 2018; Yin, 2018). The literature review establishes the conceptual basis of the study, the interviews provide specialised perspectives on multisensory design and regeneration, and the case studies examine how these issues appear in practice.

2.2. Literature Review Procedure

A state-of-the-art literature review was conducted using Scopus, Web of Science, and Google Scholar. The review focused on publications between 2010 and 2025 in order to concentrate on the period in which multisensory design, crossmodal perception, adaptive reuse, and new materialism became more consolidated and interconnected fields of research. Earlier texts were consulted only when necessary because of their foundational importance. The selected period also corresponds to the growing diffusion of adaptive reuse practices and to the expansion of discussions on atmosphere, embodiment,

material agency, and regenerative design within architecture and interior design. Restricting the review to this timeframe made it possible to identify recent debates and contemporary approaches directly related to the current reuse of abandoned interiors. The search combined terms such as “multisensory design”, “crossmodal correspondences”, “embodiment”, “atmosphere”, “adaptive reuse”, “abandoned interiors”, “biophilic design”, “new materialism”, and “material agency”. The review prioritised peer-reviewed journal articles and seminal books. The material collected was analysed through thematic coding in order to identify recurrent concepts and relationships between authors (Saldaña, 2021).

2.3. Semi-Structured Interviews

Three semi-structured interviews were conducted with academics selected through purposive sampling because of their recognised expertise in sensory design, accessibility, crossmodality, and colour-material-finish design (Patton, 2015). The interviews followed a common guide of ten questions addressing multisensory comfort, crossmodal coherence, abandonment and regeneration, and the ethical implications of multisensory design. The complete interview guide is presented in Appendix A. Semi-structured interviews were chosen because they allow comparability across participants while preserving flexibility and depth (Kvale & Brinkmann, 2015). All interviews were recorded with participants’ consent, transcribed, anonymised to ensure confidentiality and encourage open reflection, and subsequently analysed through thematic coding. Participants are identified as E1, E2, and E3 throughout the article.

2.4. Case Studies and Observation

The empirical part of the study is based on two case studies selected because they combine abandoned interiors, multisensory interventions, and public accessibility. The first case is Alcova 2025 in Varedo, Milan metropolitan area, Italy, focusing on the Pasino Glasshouses and the former SNIA factory. The second case is *O Tempo das Coisas*, presented during DW! 2022 at Edifício Virgínia in São Paulo, Brazil. Case study research was adopted because it allows contemporary phenomena to be examined within their real-life context (Yin, 2018). Data collection combined non-participant observation, sensory walk-throughs, photographic documentation, and field notes. The sensory walk-through method was especially important because it documents how environments are experienced sequentially through bodily movement and changing sensory conditions (Pink, 2015).

2.5. Data Analysis and Ethical Considerations

The material collected through the literature review, interviews, and case studies was analysed through thematic analysis (Braun & Clarke, 2021). Each source was first examined independently and then compared in order to identify convergences and divergences. Particular attention was given to recurring themes related to comfort, fascination, temporality, accessibility, and regeneration. All interviewees participated voluntarily and provided informed consent. The study preserves anonymity and confidentiality and does not aim for statistical generalisation, but rather for analytical transferability through detailed interpretation (Lincoln & Guba, 1985).

3. Literature Review

3.1. Multisensory Perception and Crossmodal Correspondence

Recent research has increasingly recognised that spatial experience is fundamentally multisensory. Rather than perceiving environments through isolated sensory channels, individuals continuously integrate visual, tactile, acoustic, olfactory, and thermal information into a coherent experience. This shift has become particularly significant between 2020 and 2025, as studies in cognitive science and design have challenged the traditional predominance of vision in architecture and interiors (Coburn et al., 2017; Spence, 2020). Within this context, the concept of crossmodal correspondence has become especially relevant. Crossmodal correspondences refer to the stable associations people establish between different sensory modalities, such as linking warm colours with higher temperatures, smooth materials with softer sounds, or darker spaces with heavier tactile qualities.

These associations contribute to perceptual fluency, allowing environments to be interpreted more easily and experienced as coherent and comfortable (Spence, 2020; Velasco & Spence, 2022). The implications for interior design are significant. Comfort does not necessarily emerge from the reduction of sensory intensity, but rather from the coherence between sensory cues. Light, smell, texture, acoustics, and temperature are experienced relationally. When these elements reinforce one another, environments tend to be perceived as more legible, intuitive, and emotionally balanced. Conversely, when

they conflict, the experience may become confusing or overwhelming (Spence, 2020; Xu et al., 2025).

3.2. Embodiment, Atmosphere, and the Critique of Ocularcentrism

Recent literature has also reinforced the importance of embodiment as a way of understanding how people experience interiors. Embodied theories argue that the body is not simply located within space, but actively constructs spatial meaning through movement, memory, orientation, and sensory interaction. Consequently, interiors are experienced not as static visual compositions, but as sequences of bodily encounters unfolding over time (Mallgrave, 2013; Leach, 2021). This perspective has contributed to renewed criticism of ocularcentrism in architecture and interior design. Contemporary authors continue to argue that design education and practice often privilege the visual dimension while underestimating the role of sound, smell, touch, humidity, and temperature in the construction of atmosphere (Pallasmaa, 2005; Spence, 2020).

More recent discussions propose that architecture should be understood as a mindful and embodied experience, in which all sensory modalities participate in the interpretation of space. The concept of atmosphere has become central within this debate. Atmosphere is increasingly understood as a relational condition emerging between bodies and environments rather than as a fixed property of space. It is generated through the interaction of light, materiality, sound, microclimate, scale, and movement, producing emotional and percep-

tual responses that shape how interiors are interpreted and remembered (Böhme, 1993; Griffero, 2014).

This understanding is especially important for abandoned interiors. Such spaces are often characterised by unstable and intense atmospheres generated by filtered light, reverberation, dust, residual odours, moisture, and visible deterioration. These sensory conditions contribute to experiences that are simultaneously affective, ambiguous, and deeply embodied.

3.3. Adaptive Reuse, Regeneration, and Abandoned Interiors

Between 2020 and 2025, adaptive reuse has increasingly been discussed not only as a strategy of conservation, but also as a form of regeneration. Recent literature connects reuse to environmental sustainability, circularity, and the extension of building lifecycles, while also emphasising the cultural and social value of preserving existing structures (Plevoets & Van Cleempoel, 2023). However, adaptive reuse is not merely a technical process. The transformation of abandoned interiors also involves the reinterpretation of traces, memory, and material history. Recent studies have highlighted that signs of ageing, wear, and imperfection can contribute positively to experience because they communicate continuity, authenticity, and temporal depth (DeSilvey, 2017; Cairns & Jacobs, 2024).

At the same time, the literature stresses the ambivalence of abandoned environments. Such spaces often provoke fascination because they expose the passage of time, incomplete narratives, and the coexistence of deterioration and possibility. Yet they may also generate uncertainty, discomfort, or exclusion. This tension has become increasingly relevant as

abandoned interiors are reused through temporary exhibitions, cultural programmes, and design events (Jorgensen & Tylecote, 2007). Recent work on regenerative interiors also suggests that reuse should not erase the sensory qualities of existing spaces. Instead, successful interventions often work with pre-existing material conditions, such as humidity, patina, vegetation, acoustic reverberation, and residual traces of occupation, transforming them into part of the new experience (Xu et al., 2025).

3.4. New Materialism and the Agency of Matter

The growing influence of new materialism has further expanded recent debates on interiors and regeneration. New materialist approaches argue that matter should not be treated as passive or inert, but as something capable of affecting and participating in spatial experience. In this perspective, materials possess a form of agency because they influence how spaces are perceived, used, and transformed (Bennett, 2010; Coole & Frost, 2010). Recent studies have applied these ideas to architecture and interior design, suggesting that materials, infrastructures, and environmental conditions actively shape human behaviour and perception.

This argument is especially relevant in abandoned interiors, where rust, dust, humidity, broken glass, corroded metal, and spontaneous vegetation do not simply signify neglect. They actively produce atmospheres, modify sensory conditions, and influence bodily movement. From this perspective, the sensory qualities of abandoned interiors emerge not only because designers intentionally create them, but because

existing materials continue to act. Broken windows change light diffusion, humidity alters smell and temperature, vegetation reshapes thresholds, and ageing surfaces transform tactile and visual perception. Regeneration therefore involves a negotiation between new interventions and the agency of existing matter (Bennett, 2010).

4. Results: Interviews and Case Studies

4.1. Interview Findings

The interviews revealed a strong convergence around the idea that multisensory design should not be understood as the addition of isolated sensory effects, but rather as the articulation of relationships between environmental conditions, material qualities, and bodily perception. All three participants criticised the predominance of vision in architecture and interior design and emphasised that comfort depends on how different sensory modalities operate together.

Expert 1 (E1), whose research focuses on sensory atmospheres, olfactory design, and multisensory experience, argued that multisensory environments should be conceived systemically from the earliest stages of a project. According to E1, smell, humidity, ventilation, sound, and materiality should not be introduced afterwards as decorative layers, but integrated into the logic of the spatial proposal itself. E1 also emphasised that multisensory design requires scientific grounding in order to avoid superficial or merely spectacular effects. In this sense, comfort was described not as the absence of stimulation, but as the presence of sensory coherence.

Expert 2 (E2), whose work addresses crossmodality, synaesthesia, and accessible communication, reinforced this argument by stressing that crossmodal coherence is fundamental not only for pleasure, but also for legibility and inclusion. According to E2, users interpret environments more easily when different sensory cues support one another. Conversely, environments in which smell, sound, materiality, and light communicate conflicting information tend to produce uncertainty or discomfort. E2 also noted that design education remains strongly visual and frequently neglects sensory diversity, making designers less prepared to address sound, smell, tactile qualities, or the needs of people with different sensory sensitivities.

Expert 3 (E3), whose research focuses on colour, materiality, and regenerative aesthetics, highlighted the role of deterioration, patina, and imperfection in contemporary perceptions of regeneration. According to E3, recent design culture increasingly values traces of age and incompleteness because they communicate authenticity, sustainability, and temporal depth. However, E3 warned that these qualities can easily be romanticised. The mere presence of patina or visible deterioration does not necessarily correspond to actual environmental responsibility. Regenerative aesthetics therefore require critical interpretation rather than automatic celebration.

Across the three interviews, a recurring concept was the temporal organisation of multisensory experience. Rather than describing interiors as fixed atmospheres, the participants repeatedly referred to the idea of sequence, rhythm, and pro-

gression. One interviewee compared multisensory experience to a “sensory score”, in which different moments of activation, transition, and relief are orchestrated through movement. In this view, comfort depends not only on which sensory cues are present, but also on when and how they appear.

The interviews also identified accessibility as a central concern. Sensory intensity was described as potentially exclusionary when visitors are exposed to strong odours, excessive reverberation, darkness, or confusing spatial sequences without alternatives or moments of relief. The participants therefore argued that multisensory environments should include multiple routes, adjustable levels of stimulation, and different forms of communication in order to remain inclusive.

4.2. Case A: Alcovia, Italy

The first case study examined Alcovia 2025, an event held in Varedo, in the Milan metropolitan area, which occupied a series of abandoned or underused sites. The analysis focused on two of these locations: the Pasino Glasshouses and the former SNIA factory. The Pasino Glasshouses were characterised by broken glazing, rusted metal structures, high humidity, spontaneous vegetation, and diffuse natural light. Even before the introduction of any installation, the site already possessed a strong multisensory atmosphere shaped by temperature, smell, reverberation, and material deterioration. The sensory conditions of the abandoned greenhouse therefore operated as an active substrate rather than as a neutral background. Within this setting, the installation *Ghost Orchid*, by Marcin Rusak Studio, introduced suspended biodegradable forms that appeared to

emerge from the environment itself (Fig. 1). The translucent objects, combined with mist and filtered light, intensified the perception of humidity, fragility, and transformation already present in the greenhouse. Rather than contrasting with the site, the intervention reinforced the existing atmosphere and produced a high degree of sensory coherence.



Figure 1. Alcova 2025, Varedo, Milan metropolitan area, Italy. Left: *Ghost Orchid* by Marcin Rusak Studio and *Olfactory Reflections* by AVAU, in the Pasino Glasshouses. Right: tactile material library in the former SNIA factory (Photo by author).

The atmosphere of the greenhouse therefore depended not on a single dominant element, but on the interaction between humidity, smell, light, material deterioration, and bodily movement. The former SNIA factory presented a different sensory configuration. In contrast to the humidity and organic atmosphere of the greenhouse, the factory was defined by hard surfaces, acoustic reverberation, rough textures, and traces of industrial production. Here, one of the most significant interventions was a tactile material library that encouraged visitors to manipulate, compare, and combine materials (Fig. 1). This intervention produced a more active and exploratory form of multisensory engagement. The possibility of touching materials created direct correspondences between visual

expectations and tactile confirmation. Visitors moved slowly through the space, repeatedly approaching, handling, and comparing objects. In this case, comfort emerged through tactile legibility and through the possibility of actively constructing sensory understanding. Across both sites, the event demonstrated that comfort does not necessarily depend on reducing the sensory intensity of abandoned interiors. On the contrary, both the greenhouse and the factory were atmospherically intense. However, the experience remained legible because the interventions worked with the existing material and environmental conditions rather than against them.

4.3. Case B: O Tempo das Coisas, Brazil

The second case study focused on *O Tempo das Coisas*, an exhibition presented during DW! 2022 in the Edifício Virgínia, a modernist residential building in central São Paulo that had remained partially abandoned while awaiting renovation. Unlike Alcova, where individual installations introduced strong multisensory effects, the exhibition in São Paulo relied more directly on the atmosphere already present in the building. The apartments retained visible signs of age, including worn floors, peeling paint, deteriorated surfaces, residual domestic traces, filtered light, and acoustic emptiness. These elements were not concealed. Instead, they were incorporated into the curatorial strategy and became part of the exhibition itself (Fig. 2). The experience of the building depended strongly on movement and sequencing. Visitors crossed corridors, staircases, thresholds, and rooms, encountering different sensory intensities from one apartment to another. Some spaces were nearly empty, emphasising silence, light, and deterioration.

Others contained suspended objects, colour interventions, reflective surfaces, or stronger material contrasts. The building therefore functioned as a sequence of multisensory episodes rather than as a single unified environment.



Figure 2. Edifício Virgínia, São Paulo, Brazil, interiors during *O Tempo das Coisas* at DW! 2022, showing residual domestic traces, patina, and multisensory installations (Photo by author).

The atmosphere of *O Tempo das Coisas* was marked by a strong sense of temporality. Rather than presenting abandonment as a defect, the exhibition transformed traces of wear and incompleteness into evidence of time. Comfort emerged not because the environment was visually polished or sensorially controlled, but because the sensory qualities of the building formed a coherent narrative. Visitors could read the deterioration of the space as part of a broader story about memory, transformation, and possible futures. At the same time, the São Paulo case revealed a tension that did not appear as clearly in Alcova. The exhibition temporarily opened a previously inaccessible building to the public and framed it as a site of collective experience and cultural value. However, the same building later became associated with real-estate redevelopment and rising property values. The case therefore suggests that multisensory regeneration can operate simulta-

neously as an inclusive cultural strategy and as a process that contributes to urban revalorisation and potential exclusion.

4.4. Cross-Case Comparison

Although the two case studies differ in context and curatorial strategy, they reveal several common patterns. In both cases, the abandoned interior already possessed a strong multisensory atmosphere before any intervention took place. Humidity, light, reverberation, material traces, odours, and deterioration functioned as active conditions shaping the experience. In both cases, the interventions were successful when they worked with these existing conditions rather than attempting to neutralise or conceal them. At Alcova, the installations amplified the sensory atmosphere of the greenhouse and factory through mist, scent, and tactile interaction. In São Paulo, the exhibition relied more directly on the building itself, using existing traces and sequences of movement as the basis of the experience. The comparison also reveals two different modes of multisensory comfort.

In Alcova, comfort emerged through immersion and sensory intensity organised in a coherent way. In *O Tempo das Coisas*, comfort depended more strongly on narrative continuity and temporal progression. Nevertheless, in both cases, comfort was associated with coherence rather than with sensory reduction. Finally, the comparison highlights different forms of critical tension. In Alcova, the principal challenge concerned sensory accessibility, since humidity, scent, and reduced visibility may become overwhelming for some users. In São Paulo, the central tension concerned the relationship between

public cultural access and later real-estate valorisation. Together, the two cases demonstrate that multisensory regeneration is not only an aesthetic question, but also an ethical and political one.

5. Discussion

5.1. Convergences Between Literature, Interviews, and Case Studies

The triangulation of literature review, interviews, and case studies confirms that multisensory comfort in abandoned interiors cannot be understood as a matter of sensory reduction or technical control alone. Instead, comfort emerges through the relationship between existing spatial conditions, designed interventions, bodily movement, and the temporal organisation of experience. The three sources of evidence converge in showing that abandoned interiors are not neutral containers later activated by design. They are already materially active, atmospherically charged, and perceptually complex environments. A first major point of convergence concerns the multisensory nature of spatial experience. The literature review challenged the visual bias that has historically shaped architectural thinking, arguing that interiors are experienced through the interaction of sight, touch, smell, sound, temperature, and movement (Coburn et al., 2017; Spence, 2020). The interviews reinforced this understanding, since all three participants rejected the idea of multisensory design as the addition of isolated sensory effects. Instead, they described it as a relational process involving atmosphere, materiality, sequence, and bodily perception. The two cases confirmed this empirically. In both Alcova 2025

and *O Tempo das Coisas*, humidity, reverberation, filtered light, smell, tactile surfaces, and spatial pacing shaped the experience as strongly as visual form.

A second point of convergence lies in the role of crossmodal coherence. Recent literature suggests that comfort is more likely to emerge when sensory cues reinforce one another rather than compete for attention, because perceptual fluency depends on coherent relations across modalities (Spence, 2011; Velasco & Spence, 2022). This proposition was clearly supported by the interviews. E1 explicitly described comfort as the result of sensory coherence rather than sensory neutrality, while E2 connected crossmodal consistency to both legibility and inclusion.

The case studies gave concrete form to this idea. In the Pasino Glasshouses, mist, diffused light, humidity, vegetation, and scent produced an immersive atmosphere that remained legible because the sensory cues belonged to the same perceptual field. In the former SNIA factory, tactile engagement through the material library aligned vision and touch, reducing ambiguity through haptic confirmation. In São Paulo, comfort emerged from the coherence between visible wear, residual domestic traces, filtered light, and the curatorial sequencing of the apartments.

At the same time, the empirical material complicates the literature by showing that crossmodal coherence in abandoned interiors is not designed from scratch. In more controlled environments, such as retail or hospitality spaces, multisensory alignment is often the result of a high degree of curatorial control. By contrast, in abandoned interiors coherence

is negotiated with pre-existing matter. Designers begin from humidity, deterioration, acoustic irregularity, broken glazing, worn floors, and residual traces. This is where new materialist thought becomes particularly relevant. Bennett (2010) argues that matter should not be treated as passive, but as capable of affecting action and perception.

The case studies strongly support this proposition. Rust altered colour and tactility, broken glass changed the diffusion of light, humidity transformed thermal and olfactory perception, and ageing surfaces shaped movement and caution. The interviews similarly reinforced this point, especially when E3 described the interpretation of existing traces as already being a design act.

Embodiment and temporality constitute a third area of convergence. The literature review suggested that atmosphere is not a fixed visual property, but an embodied condition emerging between bodies and environments (Böhme, 1993; Griffero, 2014). The interviews developed this idea further through the notion of a “sensory score”, describing multisensory experience as a sequence of activation, transition, pause, and relief. The case studies confirmed the importance of this temporal dimension. In Alcova, visitors gradually acclimated to moisture, scent, and reduced visibility. In Ex SNIA, touch unfolded through repeated cycles of approach, manipulation, comparison, and pause. In São Paulo, the experience depended on room-to-room progression, threshold crossing, and vertical circulation through the building. These findings suggest that comfort in abandoned interiors is not only a product of spatial composition, but also of pacing.

Across the discussion, five analytical layers recur as the principal dimensions through which multisensory comfort as regeneration can be interpreted: host spatial conditions, multisensory interventions, crossmodal and temporal mechanisms, experiential outcomes, and critical modulators. The comparison between the two case studies can therefore be synthesised through the Comparative Analytical Matrix: Multisensory Comfort as Regeneration (Table 1). The matrix organises the principal points of convergence and divergence across these five layers. It demonstrates that both cases rely on pre-existing sensory conditions and material traces, while differing in the way comfort, fascination, and regeneration are produced.

Analytical Layer	Alcova 2025 Pasino Glasshouses, Ex SNIA	O Tempo das Coisas Edifício Virgínia
Host Conditions	Greenhouse humidity, broken glazing, spontaneous vegetation, rusted structures, industrial roughness, reverberant acoustics, and strong atmospheric contrast between the Pasino Glasshouses and Ex SNIA.	Modernist residential shell with worn floors, peeling paint, filtered light, residual domestic traces, silence, and visible signs of abandonment and age.
Multisensory Interventions	Mist, scent, diffused light, translucent biodegradable forms in Ghost Orchid, olfactory interaction in Olfactory Reflections, and tactile engagement through the material library.	Minimal curatorial intervention relying on the existing building atmosphere, combined with suspended objects, colour, reflective surfaces, and spatial sequencing across the apartments.
Crossmodal and Temporal Mechanisms	Sensory acclimatisation through gradual exposure to humidity, smell, and low visibility; strong alignment between visual, tactile, and olfactory cues; iterative cycles of touching, comparing, and pausing in Ex SNIA.	Sequential room-to-room progression; thresholds, corridors, and vertical circulation structure the experience; coherence emerges through the temporal reading of traces, light, and domestic remains.
Experiential Outcomes	Immersion, fascination, tactile legibility, memorability, and comfort produced through sensory intensity organised coherently.	Narrative coherence, temporal depth, reflective engagement, fascination with traces of time, and comfort produced through gradual interpretation rather than sensory saturation.
Critical Modulators	Potential sensory overload due to humidity, scent, reverberation, and reduced visibility; accessibility concerns for visitors with respiratory sensitivities or sensory processing differences.	Tension between cultural democratisation and later real-estate valorisation; possible exclusion through future redevelopment despite the temporary opening of the building to the public.

Table 1. Comparative Analytical Matrix: Multisensory Comfort as Regeneration.

5.2. Multisensory Comfort as Regeneration

Taken together, the comparison between literature, interviews, and case studies allows the synthesis initially proposed in the literature review to be reconsidered empirically. Four main conclusions emerge. First, spatial experience in abandoned interiors is fundamentally multisensory and cross-modal rather than predominantly visual. Second, comfort emerges through coherence and temporal organisation rather than through sensory minimisation. Third, adaptive reuse increasingly values the preservation of traces and atmospheres, although this may also aestheticise decay. Fourth, the agency of matter actively shapes perception before any design intervention takes place. The findings also help explain why fascination plays such a complex role in reused abandoned interiors. The literature already suggested that abandoned environments evoke both attraction and unease (Jorgensen & Tylecote, 2007). The interviews reinforced this ambivalence by warning that patina, imperfection, and atmospheric intensity can be meaningful, but may also become spectacle. The two case studies illustrate both possibilities. In Alcova, fascination emerged through the coexistence of deterioration and immersive intervention. In São Paulo, fascination was produced less through spectacle than through the gradual revelation of domestic traces, silence, and temporal depth.

These differences indicate that fascination supports regenerative perception only when it is integrated into a coherent multisensory sequence. When sensory intensity becomes excessive or disconnected from bodily orientation, fascination may generate overload rather than comfort. Likewise, when

deterioration is presented merely as an aesthetic image, regeneration risks becoming a superficial visual language rather than a meaningful environmental and social process. This is where one of the main divergences between literature and empirical evidence becomes visible. Much recent literature on adaptive reuse emphasises sustainability, regeneration, and the preservation of existing structures (Plevoets & Van Cleempoel, 2023).

While these perspectives are valuable, the interviews and case studies indicate that the language of regeneration can obscure tensions. E3 explicitly warned that regenerative aesthetics should not be mistaken for actual environmental responsibility. In both Alcova and São Paulo, visible signs of age and reuse contributed strongly to the perception of authenticity and sustainability. Yet these sensory signals do not by themselves confirm environmental performance, social benefit, or long-term inclusiveness. Accessibility constitutes another critical tension. The interviews stressed that multisensory environments are not experienced equally by all users. E2 emphasised that current design education remains strongly visual and often ignores sensory diversity. The Pasino Glasshouses revealed this clearly: the combination of humidity, scent, and low visibility produced a compelling atmosphere, but may also challenge visitors with respiratory sensitivities, anxiety, or sensory processing differences. São Paulo presented a different situation, since navigation through a deteriorated multi-room building required bodily orientation and tolerance for ambiguity. Inclusive multisensory design therefore depends not only on physical accessibility, but also on sensory legibility, optionality, and moments of relief.

A final tension concerns the politics of access. The São Paulo case demonstrated that cultural activation can simultaneously democratise access and contribute to revalorisation. The exhibition temporarily opened a previously inaccessible building to the public, producing a sense of collective encounter and urban rediscovery. However, the same building later became associated with higher-value redevelopment. Regenerative multisensory interventions may therefore support both inclusion and exclusion, depending on how access is structured over time. From this triangulation emerges a more precise understanding of multisensory comfort as regeneration. Comfort is not the opposite of fascination, nor is regeneration the opposite of deterioration. Rather, comfort in regenerated abandoned interiors emerges when fascination is organised through coherent multisensory relations, when material traces are framed without being neutralised, and when the temporal sequence of the experience allows bodies to orient themselves without overload. This interpretation is synthesised in the layered framework proposed in Figure 3. The framework connects host spatial conditions, multisensory interventions, crossmodal and temporal mechanisms, experiential outcomes, and critical modulators. More than a design sequence, the framework should be understood as a dynamic system in which perception, material agency, and ethical concerns remain continuously entangled.

6. Conclusion

This article investigated how multisensory and crossmodal strategies contribute to comfort and regenerative perception in abandoned interiors temporarily activated through cultur-

al programmes and installations. By triangulating literature review, semi-structured interviews, and two case studies, the study demonstrated that comfort in these environments does not emerge from the elimination of sensory irregularity or from the technical neutralisation of space. Instead, comfort is produced through the coherent and temporally organised interaction between existing material conditions, multisensory interventions, and bodily movement. In this sense, the findings support the initial hypothesis of the research. The study proposed that comfort in abandoned interiors would emerge not despite deterioration, sensory intensity, and material irregularity, but through them, when these conditions are integrated into a legible and coherent crossmodal experience. The evidence gathered in both case studies confirmed this proposition. Humidity, patina, residual traces, reverberation, smell, filtered light, and tactile qualities contributed positively to comfort when they were framed within a coherent sensory sequence and when visitors were given time to acclimatise and orient themselves.

The three research questions were answered through this triangulation. Regarding RQ1, the study showed that multisensory and crossmodal strategies contribute to comfort when sensory cues reinforce one another and unfold progressively through time. Comfort was strongest when humidity, smell, light, acoustics, texture, and movement formed a coherent “sensory score”, allowing visitors to orient themselves gradually within the environment. Regarding RQ2, the findings demonstrated that fascination and regenerative perception are closely related but not identical. Fascination with abandoned interiors can

support regeneration when it is integrated into a coherent multisensory narrative that gives meaning to deterioration, traces, and incompleteness. However, fascination may also hinder comfort when it becomes spectacle, sensory overload, or a superficial aestheticisation of decay. Regarding RQ3, the study identified three principal tensions. First, immersive multisensory environments may create accessibility barriers for visitors with different sensory sensitivities. Second, the perception of sustainability generated by patina, reuse, and visible ageing does not necessarily correspond to actual environmental performance. Third, cultural activation may simultaneously democratise access and contribute to later socio-economic exclusion through processes of urban revalorisation.

The article contributes theoretically by reframing comfort as a multisensory, crossmodal, temporal, and relational phenomenon in adaptive reuse. Rather than treating comfort as the absence of stimulation, the study proposes that comfort depends on the coherence of sensory relations and on the temporal pacing of experience. The article also contributes to recent discussions on adaptive reuse by integrating atmosphere, embodiment, and new materialist perspectives, showing that existing materials actively participate in shaping regenerative perception. Methodologically, the study contributes by combining literature review, interviews, and sensory observation through a comparative framework. Table 1 synthesises this contribution through the Comparative Analytical Matrix: Multisensory Comfort as Regeneration, while Figure 3, presented at the end of this section, translates the findings into a layered framework linking host spatial conditions, multisensory interventions,

crossmodal and temporal mechanisms, experiential outcomes, and critical modulators. Together, the table and the framework provide a practical tool for analysing and designing multisensory interventions in abandoned interiors.

Despite these contributions, the study has important limitations. The research adopted an exploratory qualitative approach based on two case studies and three expert interviews selected for their recognised expertise in sensory design, crossmodality, accessibility, and materiality. Rather than seeking statistical generalisation, the study aimed to generate theoretically relevant insights and hypotheses regarding multisensory comfort and regeneration in adaptive reuse contexts. In addition, the analysis focused primarily on temporary cultural activations in Europe and Latin America and did not include direct visitor interviews or physiological measurements. The findings therefore reflect interpretative and observational evidence rather than measurable sensory responses. Future research could expand the number and diversity of cases, including other building typologies, geographic contexts, and longer-term adaptive reuse projects. Further studies could also incorporate visitor interviews, ethnographic observation, or biometric methods to examine how multisensory comfort is experienced by different groups of users. Particular attention should be given to accessibility, since sensory experiences are not perceived equally by all bodies. Finally, future research could investigate how multisensory regeneration evolves over time, especially after temporary cultural activation gives way to permanent redevelopment. Rather than understanding abandoned interiors as

empty containers waiting to be redesigned, this article argues that they should be understood as already active, multisensory, and materially expressive environments. The challenge for design is therefore not to erase their complexity, but to work with it critically, inclusively, and reflectively.

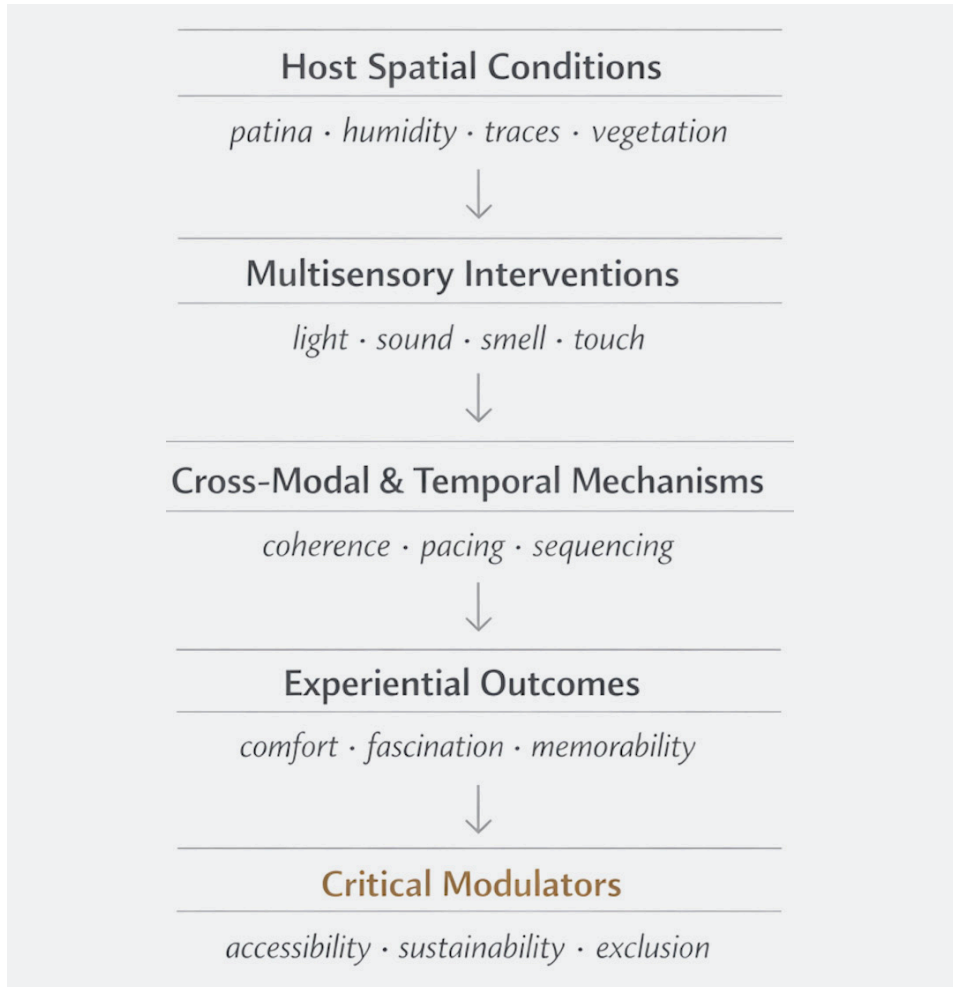


Figure 3. Multisensory Comfort as Regeneration: layered framework connecting host spatial conditions, multisensory interventions, crossmodal and temporal mechanisms, experiential outcomes, and critical modulators.

Appendix A. Semi-Structured Interview Guide

The interviews aimed to explore expert perspectives on multi-sensory design, adaptive reuse, crossmodal experience, accessibility, and regenerative approaches in abandoned interiors. The following questions guided the interviews:

1. How do you define multisensory comfort in architectural and interior environments?
2. In your view, how do different sensory modalities (vision, sound, smell, touch, temperature) interact to shape spatial experience?
3. What role do crossmodal correspondences play in creating coherent and meaningful environments?
4. How can multisensory strategies contribute to the adaptive reuse of abandoned interiors?
5. Which sensory qualities of abandoned spaces (e.g., patina, odours, acoustic conditions, material deterioration) should be preserved, transformed, or mitigated?
6. To what extent can deterioration and imperfection contribute to fascination, authenticity, and regenerative perception?
7. What risks do you associate with the aestheticisation or romanticisation of abandonment?
8. How can multisensory environments be designed to promote accessibility and inclusion for people with different sensory sensitivities?
9. In your opinion, how should designers balance sensory stimulation and moments of relief to support comfort?
10. What recommendations would you give to architects and designers working with multisensory approaches in adaptive reuse projects?

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V

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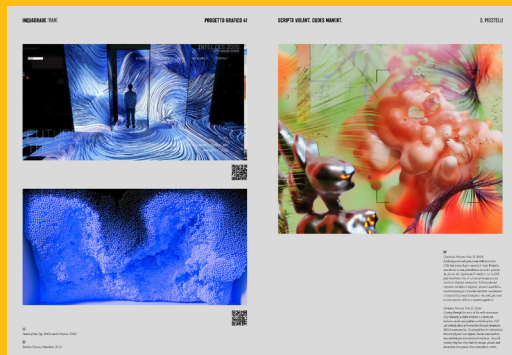
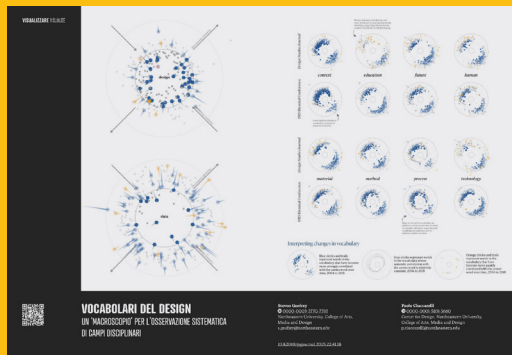
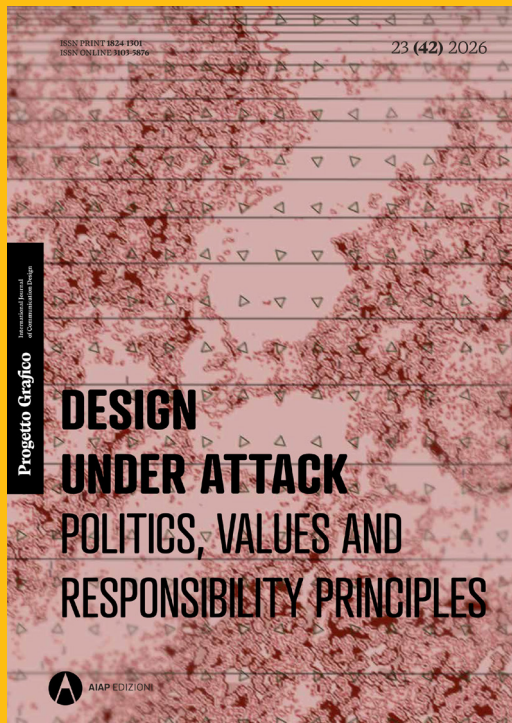
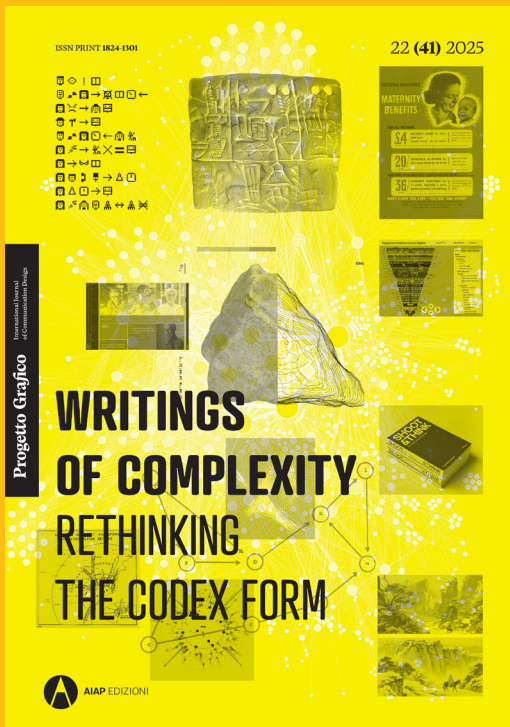
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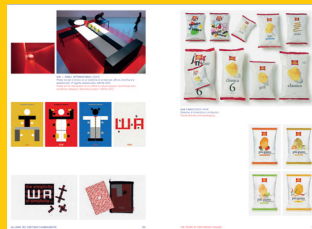
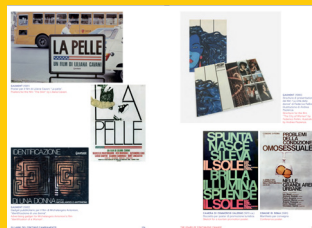
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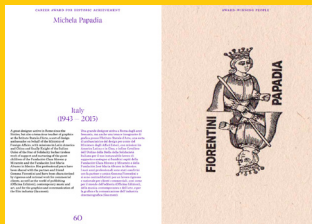
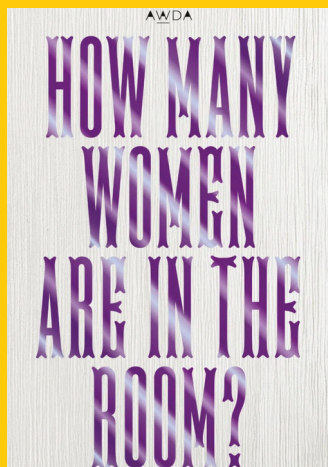
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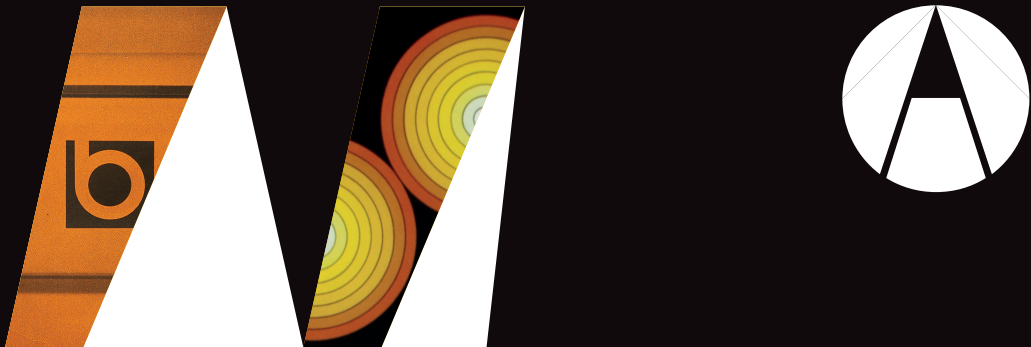
Women of Italian Graphic Design. From the Origins to Contemporaneity



How Many Women are in the Room?

AWDA – AIAP Women in Design Award





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