

# Sensory Architecture and Emotional Regulation: A Literature Review Toward the Design of a Calming Center for Anxiety Crisis Management

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**Abstract-** Anxiety is not produced by architecture alone, yet the built environment can intensify or reduce sensory load, hypervigilance, perceived loss of control, and the difficulty of emotional self-regulation. This critical literature review examines how sensorial architecture can support the spatial regulation of anxiety and establish a design framework for calming centers conceived as non-clinical transitional environments. The review synthesizes architectural phenomenology, environmental psychology, emotion-regulation theory, biophilic design, and evidence on restorative environments. It first traces the shift from visually dominated architecture toward embodied, multisensory experience; then examines anxiety, emotional regulation, and the environmental conditions that can amplify or attenuate distress. The analysis identifies five recurrent spatial variables: tactile and thermally moderate materiality, controlled acoustics, filtered light and shadow, breathable and biophilic microclimates, and enveloping but legible spatial form. These variables are translated into a calming-center sequence combining decompression thresholds, retreat alcoves, adjustable sensory rooms, gradual reconnection spaces, and restorative outdoor areas. Three precedents, Maggie's Oldham, Helsingør Psychiatric Hospital, and De Hogeweyk, are compared to test how domesticity, landscape access, spatial legibility, user choice, and familiar social settings can reduce institutional stress. The review concludes that effective calming architecture depends less on spectacular form than on calibrated sensory intensity, clear orientation, graded privacy, user agency, and a continuous relationship with nature. These principles provide the theoretical basis for a calming center intended to support emotional recovery without reproducing the visual codes of psychiatric institutionalization.

**Keywords:** Anxiety; Biophilic Design; Calming Center; Emotional Regulation; Healing Environments; Sensorial Architecture; Therapeutic Atmospheres; User Agency.

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## I. INTRODUCTION

Architecture participates in emotional life because perception is bodily before it is abstract. Light, sound, temperature, material texture, smell, enclosure, distance, and the possibility of movement are continuously interpreted by the nervous system as signals of safety, uncertainty, exposure, or control. Sternberg's synthesis of neuroscience and environmental design shows that places can influence stress-related and restorative processes [1], while Pallasmaa argues that architecture becomes meaningful when it engages the whole body rather than the eye alone [2]. This relationship is particularly relevant to anxiety, a future-oriented state marked by heightened anticipation of possible threat [3], [4].

The architectural problem is therefore not to claim that buildings treat anxiety as a clinical disorder. It is to determine how spatial conditions can support emotional regulation when a person is vulnerable, overstimulated, disoriented, or entering an anxious episode. Emotion-regulation research defines regulation as the processes through which people influence which emotions they have, when they have them, and how they experience or express them [5]. Stress appraisal further shows that perceived demands and perceived coping resources interact [6]. In this context, the built environment becomes relevant when it changes sensory demand, visibility, predictability, access to retreat, contact with nature, and the user's sense of control. Ulrich's classic study on views toward natural settings provides early empirical evidence that

environmental characteristics can be associated with restorative outcomes [7].

This article develops a critical narrative review from the literature assembled in the thesis chapter. It brings together architectural theory, environmental psychology, anxiety research, sensory studies, and project documentation. The material is organized around four questions: how multisensory architecture is perceived; how anxiety and emotion regulation interact with environmental stressors; which spatial characteristics can produce soothing rather than anxiogenic atmospheres; and which lessons from built precedents can inform a non-clinical calming center. The review is analytical rather than meta-analytic: its objective is to derive a coherent set of architectural principles and to identify both the strengths and the limitations of existing models.

## II. SENSORIAL ARCHITECTURE AS A MULTISENSORY FRAMEWORK

### A. From Ocularcentrism to Embodied Perception

Sensorial architecture emerged from a critique of the visual dominance of modern architectural culture. Bachelard describes inhabited space as a repository of memory, intimacy, and imagination [8]. Zumthor shifts attention from isolated objects to atmosphere, understood as the immediate emotional presence produced by materials, light, sound, proportion, and temperature [9]. Schafer extends this field to the soundscape, showing that environments are also structured by audible rhythms and acoustic identities [10]. Henshaw demonstrates that smell contributes to place recognition and emotional memory [11]. Together, these perspectives replace the building-as-image with the building-as-experience.

Biophilic design adds a complementary biological dimension. Kellert argues that contact with vegetation, water, natural materials, daylight, and environmental variation responds to recurrent human needs for affiliation with living systems [12]. The broader biophilic design framework developed by Kellert, Heerwagen, and Mador links this contact to health, well-being, and restorative environmental design [13]. De Botton's architectural psychology similarly treats buildings as compensatory settings capable of offering calm, order, protection, or openness when these qualities are absent from everyday life [14]. Drozd's thesis on genius loci adds the idea of an existential grip: architecture helps users orient themselves and feel physically anchored within a place [15].

### B. Materiality, Sound, Light, Microclimate, and Enclosure

Five physical characteristics recur throughout the literature. First, haptic materiality allows the body to read weight, texture, thermal response, and durability. Rough stone and exposed wood provide richer tactile information than uniformly smooth synthetic surfaces, reinforcing Pallasmaa's idea that vision can operate as an extension of touch [2].



Fig 1 Natural Stone Wall.  
Source: Vecteezy [16].



Fig 2 Wooden Wall.  
Source: Mur Design [17].

Second, controlled acoustics reduce intrusive reverberation while preserving meaningful environmental sound. Zumthor treats the building as an acoustic body [9], while Schafer's soundscape approach and Leitner's spatial sound experiments show that sound can define invisible boundaries and directions [10], [18]. Porous or textured envelopes can therefore work simultaneously as climatic and acoustic filters.



Fig 3 Terracotta Claustra.  
Source: Cimenterie de la Tour [19].

Third, filtered illumination avoids both visual flatness and sensory aggression. Tanizaki's reflection on shadow [20], Kaplan and Kaplan's restorative framework [21], and Plummer's studies of natural light [22] converge on the value of gradation rather than uniform brightness. Brise-soleil, mashrabiya, vegetation, and deep reveals transform daylight into a controlled temporal experience instead of a constant glare.



Fig 4 Brise-Soleil Terrace.  
Source: Archzine [23].



Fig 5 Traditional Mashrabiya.  
Source: Allure & Bois [24].

Fourth, a breathable microclimate combines air movement, moderated humidity, plant life, water, and natural olfactory cues. Henshaw notes the close connection between smell, memory, and affect [11]. Biophilic design adds the thermal, visual, and ecological benefits of living elements [12], [13]. Aromatic gardens can make this dimension active rather than decorative.



Fig 6 Aromatic Spiral.  
Source: Conservation Nature [25].



Fig 7 Biophilic Architecture.  
Source: Je-Construis [26].

Fifth, spatial form can combine prospect with refuge. Appleton's prospect-refuge theory explains the simultaneous value of seeing outward while remaining protected [27]. Bachelard's images of the nest and the corner [8] and Anzieu's psychological concept of the skin-ego [28] reinforce the importance of enclosure as a condition of security, provided it does not become confinement. Alcoves, backed seating, lowered ceilings, and framed views are architectural translations of this balance.



Fig 8 Furnished Alcoves.  
Source: Unita [29].

### C. The Senses as Design Variables

The senses should not be treated as separate decorative channels. Merleau-Ponty's phenomenology emphasizes perception as a unified bodily act [30]. In spatial design, vision provides orientation and distance, touch confirms material reality, sound shapes intimacy and exposure, smell activates memory, and taste can appear indirectly through edible landscapes and shared food practices. Gibson's theory of affordances is especially useful because it links perception to action: a bench affords sitting, a recess affords withdrawal, a view affords orientation, and an operable screen affords control [31]. The quality of a calming environment therefore depends on what the user can do as much as on what the user can see.



Fig 9 Urban Orchard as an Edible and Restorative Landscape. Source: Art de l'Espalier [32].

## III. ANXIETY, EMOTIONAL REGULATION, AND ENVIRONMENTAL STRESS

### A. Anxiety as an Anticipatory State

Anxiety is commonly distinguished from immediate fear by its anticipatory orientation. Barlow defines it as a future-focused state in which the individual prepares for possible negative events [3]. Earlier psychoanalytic accounts framed anxiety as a warning signal [33], while Gray's neuropsychological model linked anxiety to behavioral inhibition under uncertainty [34]. Spielberger distinguished relatively stable anxiety proneness from temporary state anxiety [35], and Hamilton developed a clinical scale that captures both psychic and somatic manifestations [36]. Contemporary neuroscience places uncertainty and threat anticipation at the center of anxious hypervigilance [4].

For architectural analysis, the important point is not diagnostic classification but sensitivity to escalating cognitive and physiological load. Mild anxiety may increase vigilance; moderate anxiety narrows attention and makes competing stimuli harder to process; severe anxiety can produce intense autonomic symptoms, disorientation, and an urgent need for safety. A calming center should therefore be able to support different thresholds of sensitivity without forcing every user into the same level of stimulation or social exposure.

### B. Environmental Amplification and Regulation

Environmental stress theory suggests that noise, crowding, complexity, and lack of control can consume attentional and coping resources. Gallagher describes the power of surroundings to shape thought, emotion, and behavior [37]. Milgram's analysis of urban overload explains how dense cities encourage filtering and defensive withdrawal [38]. Moles' psychology of space similarly emphasizes the cognitive cost of excessive or contradictory information [39]. For an anxious user, these conditions can amplify uncertainty because the environment becomes difficult to predict and difficult to escape.

Conversely, regulation can be supported by reducing sensory conflict and increasing meaningful choice. Gross's framework emphasizes that emotional regulation can occur by modifying situations, attention, interpretation, and response [5]. Lazarus and Folkman show that stress depends partly on whether the person appraises a situation as manageable [6]. Architecture can influence this appraisal indirectly by providing visible exits, understandable circulation, adjustable lighting, access to fresh air, variable social distance, and places of refuge. These are not substitutes for psychological care, but they can lower unnecessary environmental demands.

### C. Legibility, Identity, and User Agency

Spatial legibility is particularly important under stress. Lynch's work on imageability shows that paths, edges, landmarks, nodes, and districts help people build stable mental maps [40]. Proshansky, Fabian, and Kaminoff argue that place identity becomes part of the self through repeated environmental experience [41], while Altman and Low's work on place attachment shows how bonds with familiar

environments support continuity and meaning [42]. A calming environment should therefore avoid maze-like circulation, abrupt dead ends, and ambiguous thresholds. Repetition, visible structure, framed destinations, and gradual transitions can reduce the cognitive work required to understand where one is and where one can go.

#### IV. ARCHITECTURAL ATMOSPHERES AND EMOTIONAL RESPONSE

##### A. Soothing and Anxiogenic Atmospheres

Thibaud's work on *ambience* treats atmosphere as a field that is perceived through movement, sound, light, materiality, and social presence rather than as a visual style [43]. A soothing atmosphere tends to be coherent, moderate, and interpretable. It can include dimmable or indirect light, acoustic absorption, natural textures, controlled views, and low-intensity natural sound. An anxiogenic atmosphere tends to be characterized by glare, abrupt contrast, reverberation, overcrowding, unfiltered visual information, long exposed corridors, and restricted opportunities to withdraw or modify one's surroundings.



Fig 10 Living Room with Dim Lighting.  
Source: Mon Cozy Appartement [44].

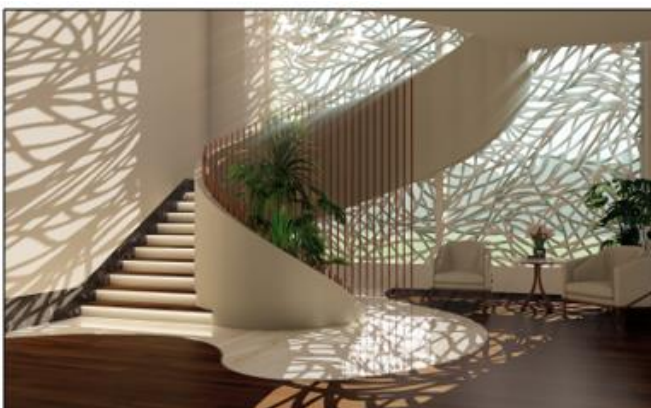


Fig 11 Shadow and Filtered Light as Atmospheric Devices.  
Source: Amusement Logic [45].

Materiality contributes to this atmosphere by influencing touch, temperature, acoustics, and visual familiarity. Earth, timber, stone, textiles, and plant matter can provide tactile variation and acoustic softness while reducing the clinical impression associated with highly reflective synthetic surfaces. Their use must nevertheless be compatible with hygiene, durability, maintenance, and local availability.



Fig 12 Raw Earth Wall and Timber Surface.  
Source: Mil-Lieux [46].



Fig 13 Garden as a Restorative Visual and Olfactory Environment.  
Source: Maison & Jardin Magazine [47].

##### B. Body-Space Interaction and Restoration of Control

The emotional effect of space is mediated by the body. Pallasmaa [2] and Merleau-Ponty [30] both reject a detached spectator model: people experience architecture through posture, movement, skin, balance, temperature, sound, and memory. When environmental cues are coherent, the body can anticipate what happens next. When they are contradictory or overwhelming, the user may become more vigilant. The design task is therefore to create a readable sensory envelope that offers both containment and options.

A key mechanism is the restoration of control. Gibson's affordances [31] become emotionally significant when users can select a seat with a protected back, dim a lamp, open a

screen, choose between sociability and withdrawal, or see the next destination before moving. This agency can counter the passivity that often accompanies distress. The architectural objective is not maximal stimulation but calibrated choice.



Fig 14 Cocoon-Like Spatial Enclosure Illustrating Refuge with Outward View.  
Source: Build Green [48].

## V. THE CALMING CENTER AS A SPATIAL TYPOLOGY

### A. Definition and Role

The thesis defines a calming center as an architectural device for emotional regulation rather than a conventional psychiatric treatment facility. It is conceived as an intermediate environment in which controlled sensory immersion supports the transition from tension toward restoration. Its role can be understood through three linked actions. First, it interrupts attentional fatigue through low-demand restorative stimuli, consistent with Kaplan and Kaplan's fascination framework [21]. Second, it provides a containing spatial envelope without reproducing institutional confinement, echoing Anzieu's notion of psychic containment [28]. Third, it reduces avoidable environmental stress by giving the user legibility, retreat, and control.

### B. Spatial Sequence and Constituent Spaces

A calming center should be organized as a graded sequence rather than a collection of isolated rooms. The first layer is a decompression threshold that buffers the user from the sensory intensity of the street. The second layer is a welcoming zone with immediate orientation, visible choices, and no bureaucratic or clinical symbolism. The third layer contains retreat spaces such as alcoves and small rooms where visual, acoustic, and social exposure can be reduced. The fourth layer consists of adjustable sensory spaces in which lighting, ventilation, texture, view, or sound can be modulated. The fifth layer supports gradual reconnection through optional social spaces, workshops, quiet lounges, and shared gardens. Outdoor spaces act as a final restorative layer and as a transition back toward everyday life.

This sequence should be reversible. A user who becomes overstimulated in a collective area must be able to return easily to a quieter zone without crossing a crowded lobby or

requesting permission. Circulation should therefore be looped or branched around clear landmarks rather than organized by long dead-end corridors. Thresholds should signal changes in sensory intensity through material, light, ceiling height, planting, or acoustic absorption.

### C. Target Atmospheres and Emotional Experiences

The desired atmosphere is neither silence nor sensory deprivation. It is a low-conflict sensory field with enough variation to sustain attention gently. The main emotional objectives are a sense of safety, cognitive restoration, and regained agency. Safety is produced by enclosure, legibility, and predictable transitions. Restoration is supported by nature, filtered light, softened sound, tactile materiality, and visual depth. Agency emerges when the user can choose where to sit, what to see, how much to interact, and how much sensory input to accept. These principles translate the literature into an architectural performance brief rather than a stylistic vocabulary.

## VI. ARCHITECTURAL PRECEDENTS

### A. Selection Criteria

The precedents were selected because they allow the theoretical propositions to be tested against built environments. Five criteria guide the comparison: multisensory immersion; the capacity to contain without imprisoning; atmospheric quality; biophilic integration; and affordance or spatial flexibility. The three cases are not identical in function, but each demonstrates a different way of reducing institutional stress and supporting vulnerable users.

### B. Maggie's Oldham, United Kingdom

Maggie's Oldham, designed by dRMM, is a non-clinical support environment for people affected by cancer. Its relevance lies in the deliberate rejection of conventional hospital imagery. The building is elevated above a garden, uses exposed tulipwood as structure and finish, and organizes its interior around a central glazed void containing a tree. The plan is open but capable of privacy through curtains and spatial niches. The project therefore combines domestic scale, tactile warmth, daylight, visual contact with nature, and a non-institutional social heart [49].



Fig 15 Maggie's Oldham Center.  
Source: Architectura Viva [50].



Fig 16 Interior of Maggie's Oldham Center.  
Source: I Love Manchester [51].

For anxiety-oriented design, the transferable lesson is not simply the use of timber. It is the coordination of material warmth, visual continuity, domestic association, and flexible degrees of privacy. The central tree operates simultaneously as a landmark, a biophilic element, and an orientation device. Later project imagery also shows how the void can bring daylight and garden views into the center of the plan, reinforcing the relation between interior safety and exterior nature.



Fig. 17. Central Planted Void at Maggie's Oldham.  
Source: Architect's Journal [52].

### C. Helsingør Psychiatric Hospital, Denmark

Helsingør Psychiatric Hospital, developed by PLOT/JDS with BIG collaborators, addresses a paradox that is central to calming architecture: how to combine control and protection with freedom and openness. The project avoids the stereotypical windowless hospital corridor and organizes residential units in a snowflake-like plan so rooms and shared areas maintain views toward the landscape. Patios, short circulation routes, natural surfaces, and decentralised wings reduce the impression of a single institutional block [53].



Fig 18 Helsingør Psychiatric Hospital.  
Source: JDS Architects [53].



Fig 19 Interior Corridor at Helsingør Psychiatric Hospital.  
Source: JDS Architects [53].

The hospital demonstrates that security does not require sensory enclosure. Visual access to landscape can coexist with passive observation and organized care. The main lesson for a calming center is the use of short, bright, orientable circulation and repeated landscape contact. The glazed edges, however, also underline the need for careful control of glare, privacy, and overstimulation.



Fig 20 View Through Glazed Walls at Helsingør Psychiatric Hospital.  
Source: Archilovers [54].

#### D. De Hogeweyk, the Netherlands

De Hogeweyk is a dementia-care environment organized as a normalized neighborhood rather than a conventional institution. Residents live in small houses and move through streets, gardens, plazas, a supermarket, a café, and other familiar settings. The design is relevant to this review because it demonstrates how environmental familiarity, ordinary social cues, and freedom of movement can reduce the stress associated with institutionalization [55].



Fig 21 Aerial View of De Hogeweyk.  
Source: DBZ [56].



Fig 22 De Hogeweyk Village Environment.  
Source: Bored Panda [57].

The most transferable principle is normalization. Rather than announcing care through medical symbols, the environment uses everyday architecture and familiar materials to maintain social identity and routine. This approach also has limits: a protected village can become too detached from ordinary urban life if its boundaries and transitions are not carefully designed. For a calming center, the aim should be temporary restoration followed by progressive reconnection, not permanent separation.



Fig 23 Living and Social Spaces in De Hogeweyk.  
Source: 9GAG [58].

## VII. SYNTHESIS AND DESIGN PRINCIPLES

### A. Recurrent Architectural Principles

Across theory and precedent, five principles recur. The first is legibility: structure, landmarks, and circulation should be immediately understandable. The second is graded privacy: users need small retreat spaces without being completely cut off from the possibility of social contact. The third is sensory moderation: daylight, acoustics, temperature, texture, and smell should be filtered rather than maximized. The fourth is biophilic continuity: nature should operate as a climatic, perceptual, and orientation system rather than as decoration. The fifth is agency: the user should be able to adjust light, view, seating, enclosure, and level of interaction.

These principles can be summarized as a transition from imposed calm to participatory calm. A fixed environment may be visually serene while still making the user feel powerless. A supportive environment provides a stable framework but allows individual calibration. In this sense, the most important architectural quality is not a specific material or shape; it is the relationship between predictable structure and personal choice.

### B. Limitations Identified in Existing Models

The precedents also expose recurring risks. A care environment can remain too medical through signage, reception arrangements, materials, or surveillance cues. Highly designed spaces can become inflexible if furniture, lighting, and partitions cannot be adjusted. Excessive isolation can create a protected bubble that makes return to everyday urban life more difficult. Large common spaces can force social contact when the user needs distance. Natural materials and planted systems can lose their atmospheric quality when maintenance budgets decline. These limits are critical because a calming center must remain both emotionally supportive and operationally durable.

### C. Implications for the Proposed Calming Center

The review therefore supports a design direction based on human scale, adjustable sensory conditions, transitional spaces, visible structure, and nature used as a protective filter. Fragmented volumes can reduce the perceived mass of the facility. A regular structural rhythm can become an orientation cue during moments of stress. Gardens, covered galleries, and planted thresholds can mediate the transition between the center and the city. Operable screens, variable lighting, movable furniture, and multiple seating positions can restore agency. Finally, vegetation should assist shading, acoustic buffering, privacy, and seasonal change so that biophilia becomes an environmental system rather than an applied image.

## VIII. CONCLUSION

This literature review confirms that architecture is not emotionally neutral. It can increase sensory load, uncertainty, and loss of control, or it can create conditions that support orientation, safety, restoration, and agency. The most consistent theoretical contribution of sensorial architecture is the shift from a visual object to an embodied environment.

Materiality, sound, light, smell, microclimate, enclosure, movement, and nature act together as one atmospheric field.

For anxiety regulation, the central design problem is calibration. Soothing space should not become sensory deprivation, and protection should not become confinement. The calming center therefore emerges as a transitional spatial typology positioned between everyday urban stress and formal clinical care. Its architectural sequence should allow decompression, retreat, adjustable sensory immersion, optional reconnection, and a gradual return to ordinary life.

The comparison of Maggie's Oldham, Helsingør Psychiatric Hospital, and De Hogeweyk shows that the strongest precedents replace institutional imagery with human scale, natural materials, landscape contact, familiar social settings, short and legible circulation, and varying degrees of privacy. Their limitations also clarify the next design challenge: the future calming center must be adaptable, maintainable, non-stigmatizing, and connected to the city. These findings establish the theoretical basis for the architectural development of the thesis project.

## REFERENCES

- [1]. E. M. Sternberg, *Healing Spaces: The Science of Place and Well-Being*. Cambridge, MA, USA: Harvard University Press, 2009.
- [2]. J. Pallasmaa, *The Eyes of the Skin: Architecture and the Senses*, 2nd ed. Chichester, U.K.: Wiley, 2005.
- [3]. D. H. Barlow, *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic*, 2nd ed. New York, NY, USA: Guilford Press, 2002.
- [4]. D. W. Grupe and J. B. Nitschke, 'Uncertainty and anticipation in anxiety: An integrated neurobiological and psychological perspective,' *Nature Reviews Neuroscience*, vol. 14, pp. 488-501, 2013, doi: 10.1038/nrn3524.
- [5]. J. J. Gross, 'The emerging field of emotion regulation: An integrative review,' *Review of General Psychology*, vol. 2, no. 3, pp. 271-299, 1998.
- [6]. R. S. Lazarus and S. Folkman, *Stress, Appraisal, and Coping*. New York, NY, USA: Springer, 1984.
- [7]. R. S. Ulrich, 'View through a window may influence recovery from surgery,' *Science*, vol. 224, no. 4647, pp. 420-421, 1984, doi: 10.1126/science.6143402.
- [8]. G. Bachelard, *La poétique de l'espace*. Paris, France: Presses Universitaires de France, 1957.
- [9]. P. Zumthor, *Atmospheres: Architectural Environments, Surrounding Objects*. Basel, Switzerland: Birkhäuser, 2006.
- [10]. R. M. Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT, USA: Destiny Books, 1977.
- [11]. V. Henshaw, *Urban Smellscapes: Understanding and Designing City Smell Environments*. New York, NY, USA: Routledge, 2013.
- [12]. S. R. Kellert, *Nature by Design: The Practice of Biophilic Design*. New Haven, CT, USA: Yale University Press, 2018.

- [13]. S. R. Kellert, J. H. Heerwagen, and M. Mador, Eds., *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life*. Hoboken, NJ, USA: Wiley, 2008.
- [14]. A. de Botton, *The Architecture of Happiness*. London, U.K.: Penguin Books, 2006.
- [15]. P. Drozd, 'Comment, par une approche respectueuse du Genius Loci, pouvons-nous reconverter les faiblesses du lieu en avantages?' Master's thesis, Joint Master of Architecture HES-SO, Geneva, Switzerland, 2021.
- [16]. Vecteezy, 'Natural stone texture wall.' [Online]. Available: <https://fr.vecteezy.com/photo/17522706-mur-de-texture-en-pierre-naturelle>
- [17]. Mur Design, 'Mur en bois,' 2021. [Online]. Available: <https://www.mur-design.fr/mur-en-bois/>
- [18]. B. Leitner, *Sound:Space*. New York, NY, USA: New York University Press, 1978.
- [19]. Cimenterie de la Tour, 'Claustras et briques en terre cuite,' 2024. [Online]. Available: <https://www.cimenterie-de-la-tour.com/les-claustras-terre-cuite/>
- [20]. J. Tanizaki, *Éloge de l'ombre*. Paris, France: Publications Orientalistes de France, original work published 1933.
- [21]. R. Kaplan and S. Kaplan, *The Experience of Nature: A Psychological Perspective*. Cambridge, U.K.: Cambridge University Press, 1989.
- [22]. H. Plummer, *The Architecture of Natural Light*. New York, NY, USA: Monacelli Press, 2009.
- [23]. Archzine, 'Brise-soleil terrasse.' [Online]. Available: <https://www.archzine.fr/>
- [24]. Allure & Bois, 'Moucharabieh traditionnel.' [Online]. Available: <https://www.allureetbois.com/moucharabieh-moderne-bois/>
- [25]. Conservation Nature, 'Spirale aromatique.' [Online]. Available: <https://www.conservation-nature.fr/>
- [26]. Je-Construis, 'Architecture biophilique.' [Online]. Available: <https://je-construis.co/architecture-biophilique/>
- [27]. J. Appleton, *The Experience of Landscape*. London, U.K.: Wiley, 1975.
- [28]. D. Anzieu, *Le Moi-Peau*. Paris, France: Dunod, 1985.
- [29]. Unita, 'Furnished alcoves.' [Online]. Available: <https://www.unita.com.au/>
- [30]. M. Merleau-Ponty, *Phénoménologie de la perception*. Paris, France: Gallimard, 1945.
- [31]. J. J. Gibson, *The Ecological Approach to Visual Perception*. Boston, MA, USA: Houghton Mifflin, 1979.
- [32]. Art de l'Espalier, 'Vergers urbains,' 2022. [Online]. Available: <https://artdelespalier.org/vergers-urbains-2/>
- [33]. S. Freud, *Inhibition, symptôme et angoisse*. Paris, France: Presses Universitaires de France, 1926.
- [34]. J. A. Gray, *The Neuropsychology of Anxiety: An Enquiry into the Functions of the Septo-Hippocampal System*. Oxford, U.K.: Clarendon Press, 1982.
- [35]. C. D. Spielberger, Ed., *Anxiety and Behavior*. New York, NY, USA: Academic Press, 1966.
- [36]. M. Hamilton, 'The assessment of anxiety states by rating,' *British Journal of Medical Psychology*, vol. 32, no. 1, pp. 50-55, 1959.
- [37]. W. Gallagher, *The Power of Place: How Our Surroundings Shape Our Thoughts, Emotions, and Actions*. New York, NY, USA: Poseidon Press, 1993.
- [38]. S. Milgram, 'The experience of living in cities,' *Science*, vol. 167, no. 3924, pp. 1461-1468, 1970, doi: 10.1126/science.167.3924.1461.
- [39]. A. Moles, *Psychologie de l'espace*. Tournai, Belgium: Casterman, 1972.
- [40]. K. Lynch, *The Image of the City*. Cambridge, MA, USA: MIT Press, 1960.
- [41]. H. M. Proshansky, A. K. Fabian, and R. Kaminoff, 'Place-identity: Physical world socialization of the self,' *Journal of Environmental Psychology*, vol. 3, no. 1, pp. 57-83, 1983.
- [42]. I. Altman and S. M. Low, Eds., *Place Attachment*. New York, NY, USA: Plenum Press, 1992.
- [43]. J.-P. Thibaud, *En quête d'ambiances : Éprouver la ville en passant*. Geneva, Switzerland: MétisPresses, 2015.
- [44]. Mon Cozy Appartement, 'Salon avec lumière tamisée.' [Online]. Available: <https://moncozyappartement.com/lumiere-tamisee-ambiance-cosy/>
- [45]. Amusement Logic, 'L'ombre et la lumière en architecture.' [Online]. Available: <https://amusementlogic.fr/nouvelles-de-lentreprise/lombre-et-la-lumiere-en-architecture/>
- [46]. Mil-Lieux, 'Mur en terre.' [Online]. Available: <https://www.mil-lieux.fr/reportage-chantier-mur-en-pise-a-eloyes/>
- [47]. Maison & Jardin Magazine, 'Jardin,' 2019. [Online]. Available: <https://maisonetjardinmagazine.fr/category/exterieur/jardin/>
- [48]. Build Green, 'Dragspelsuset: une cabane amorphe à Arjang en Suède.' [Online]. Available: <https://www.build-green.fr/dragspelsuset-une-cabane-amorphe-a-arjang-en-suede/>
- [49]. dRMM Architects, 'Maggie's Oldham.' [Online]. Available: <https://drmmstudio.com/project/maggies-oldham/>
- [50]. Arquitectura Viva, online architectural project archive. [Online]. Available: <https://arquitecturaviva.com/>
- [51]. I Love Manchester, 'Maggie's Centre Oldham.' [Online]. Available: <https://ilovemanchester.com/maggies-centre-oldham-supporting-cancer>
- [52]. Architect's Journal, 'dRMM's Oldham Maggie's Centre gets go-ahead.' [Online]. Available: <https://www.architectsjournal.co.uk/news/drmm-oldham-maggies-centre-gets-go-ahead>
- [53]. JDS Architects, 'PSY / Helsingør Psychiatric Hospital.' [Online]. Available: <https://jds.eu/psy/>
- [54]. Archilovers, 'Helsingør Psychiatric Hospital.' [Online]. Available: <https://www.archilovers.com/projects/81429/helsing%C3%B8r-psychiatric-hospital.html>
- [55]. DVA Dementia Village, 'DVA De Hogeweyk.' [Online]. Available: <https://www.dementiavillage.com/projects/dva-de-hogeweyk/>
- [56]. DBZ, 'De Hogeweyk.' [Online]. Available: <https://www.dbz.de/>
- [57]. Bored Panda, 'De Hogeweyk village.' [Online]. Available: <https://www.boredpanda.com/>
- [58]. 9GAG, 'Living and social space at De Hogeweyk.' [Online]. Available: <https://9gag.com/gag/axy116W>