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Epilepsy, Climate and the Built Environment: Towards a Neuro-Inclusive Architecture

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Introduction

Architecture is often discussed through questions of form, function, aesthetics, and accessibility. Yet how environments are experienced extends beyond visual perception or physical occupation. Buildings are encountered through the body, shaped by sensory experience, atmosphere, memory, and movement. As Juhani Pallasmaa argues, architecture is fundamentally a multi-sensory phenomenon, understood through embodied experience rather than detached observation¹⁵. Consequently, the relationship between people and environments cannot be reduced to the physical characteristics of space; it emerges through ongoing interactions between bodies and the environments they inhabit.

Recent developments in neuroscience, neurodesign, and disability studies have expanded understandings of these interactions, drawing attention to the ways environments can influence cognition,

¹⁵ **Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses*, 3rd edn (Chichester: Wiley, 2012)**

perception, emotion, and wellbeing. Epilepsy is one of the world's most common neurological conditions, affecting an estimated 50 million people globally¹⁶ , with India accounting for a substantial proportion of this population¹⁷. Despite its prevalence and increasing interest in the relationship between neurological experience and the built environment, epilepsy remains largely absent from architectural and environmental design discourse. Where epilepsy is addressed, discussions often focus upon safety, risk management, or medical considerations rather than lived environmental experience. This absence is significant. Everyday experiences of epilepsy unfold through continual interactions with spatial and climatic environments, sensory stimuli, and social contexts. Environments become sites through which epilepsy is anticipated, negotiated, and understood, influencing participation, navigation, comfort, and wellbeing.

As a researcher living with epilepsy, my experience of navigating architectural and climatic environments informs the perspectives presented within this paper. This positionality is not presented as representative of all experiences of epilepsy; rather, it provides one situated perspective through which relationships between body, environment, and architecture can be examined. The discussion is further informed by lived experience narratives collected through ongoing doctoral research, enabling consideration of both individual and shared experiences of environmental navigation, adaptation, and participation. Drawing upon neurophenomenology, disability

¹⁶ World Health Organization, 'Epilepsy', *WHO Fact Sheets*, 7 February 2024 <<https://www.who.int/news-room/fact-sheets/detail/epilepsy>> [accessed 7 September 2026].

¹⁷ Senthil Amudhan, Gopalkrishna Gururaj, and Parthasarathy Satishchandra, 'Epilepsy in India I: Epidemiology and Public Health', *Annals of Indian Academy of Neurology*, 18.3 (2015), 263–277

studies, and lived experience research, this paper examines epilepsy as a means of understanding relationships between body, climate, and architecture. It argues that epilepsy offers a distinctive perspective on architectural experience because it foregrounds fluctuation, uncertainty, adaptation, and environmental awareness. In doing so, the paper suggests that lived neurological experience constitutes a valuable form of architectural knowledge, revealing dimensions of the built environment that frequently remain unnoticed within conventional approaches to design.

Epilepsy and Emerging Neuro-Inclusive Design

Growing interest in neurodiversity has begun to challenge traditional approaches to accessibility within architecture and environmental design. In recent years, greater attention has been given to the relationship between built environments, sensory processing, cognition, and wellbeing, contributing to the emergence of neuro-inclusive design frameworks. Among the most significant developments is PAS 6463:2022 *Design for the Mind: Neurodiversity and the Built Environment*, which provides guidance for creating environments that respond to a broad range of sensory and neurological processing differences¹⁸. The guidance recognises that factors such as lighting, acoustics, wayfinding, thermal comfort, spatial organisation, familiarity, and safety can significantly influence how environments are experienced.

¹⁸ *British Standards Institution, PAS 6463:2022 Design for the Mind. Neurodiversity and the Built Environment. Guide (London: BSI Standards Limited, 2022)*

Importantly, PAS 6463 represents a shift away from understanding accessibility solely through physical access requirements. Instead, it acknowledges that environmental conditions can affect perception, cognition, sensory processing, and wellbeing. Consequently, it expands contemporary discussions of inclusive design towards a more nuanced understanding of human diversity. Despite this progress, epilepsy remains relatively absent from both neuro-inclusive design guidance, climate change policies and architectural discourse more broadly. While the standard addresses a range of sensory and neurological processing differences, discussions of epilepsy frequently remain isolated within medical, clinical, or risk-management frameworks rather than being considered as a source of environmental and architectural knowledge.

This absence is notable because many of the environmental considerations identified within PAS6463, including sensory regulation, thermal comfort, environmental predictability, and opportunities for recovery, resonate strongly with lived experiences of epilepsy. Examining epilepsy through these emerging neuro-inclusive frameworks therefore offers an opportunity not only to broaden understandings of neurological difference within architectural research, but also to extend current discussions concerning wellbeing, atmosphere, and human-environment interaction.

Neurophenomenology and Architectural Experience

Phenomenological approaches have long influenced architectural theory through their emphasis upon embodied experience. Rather than understanding architecture as an object to be viewed, phenomenology considers architecture as something encountered and lived through the body. Experience emerges through movement, perception, memory, sensation, and encounters with the material world.

Neurophenomenology extends these concerns by examining the relationship between consciousness, neurological processes, and lived experience. The approach seeks to bridge subjective experience and scientific understandings of the mind, recognising the value of first-person accounts in generating knowledge about perception and embodiment. Although rarely applied within architectural research concerning epilepsy, neurophenomenology offers a useful framework for exploring how neurological difference shapes environmental experience. Applying neurophenomenology to the built environment shifts attention towards the reciprocal relationship between bodies and spaces. Environments are not passive settings within which experiences occur. Instead, they actively shape perception, behaviour, attention, and bodily awareness. Likewise, different bodies encounter the same environment in distinct ways. Architectural experience therefore emerges through interaction rather than existing solely within either the environment or the individual.

This perspective has important implications for understanding epilepsy. Clinical accounts frequently locate epilepsy within

neurological processes occurring inside the body. While such understandings remain essential, they may overlook the environmental contexts through which epilepsy is lived. The experience of a busy transport hub, a crowded public space, an overheated room, or a brightly illuminated environment cannot be separated from the embodied realities of living with epilepsy. Environmental conditions become part of the experience itself.

Understanding epilepsy through a neurophenomenological lens allows these interactions to become visible. It draws attention to forms of environmental awareness, bodily adaptation, and spatial negotiation that are often excluded from both architectural and neurological discourse.

Epilepsy as Environmental Experience

Epilepsy is commonly represented through the seizure event. Such representations are understandable given the visibility and significance of seizures themselves. However, focusing exclusively on seizure activity risks obscuring the broader environmental dimensions of living with epilepsy. The Global Epilepsy Needs Study (GENS) conducted by the International Bureau of Epilepsy¹⁹ demonstrate that everyday life with epilepsy is more complex than this. Decisions concerning movement, travel, work, social participation, and engagement with unfamiliar spaces frequently require careful consideration of surroundings. My PhD research

¹⁹ *International Bureau for Epilepsy, GENS: Global Epilepsy Needs Study Policy & Advocacy Report (Dublin: International Bureau for Epilepsy, 2026)*

highlights that decisions are rarely fixed but instead respond to changing bodily and environmental circumstances.

This environmental awareness may include attention to lighting conditions, temperature, noise levels, crowding, routes of movement, availability of seating, opportunities for rest, and the accessibility of support if needed. Many of these considerations are not unique to epilepsy. However, experiences of epilepsy can intensify awareness of environmental conditions, generating a heightened attentiveness to the relationship between body and surroundings.

Importantly, this awareness should not be understood solely through frameworks of limitation or risk. Rather, it represents a form of situated knowledge produced through lived experience. People living with epilepsy often develop sophisticated understandings of environmental conditions because these conditions can have meaningful consequences for participation and wellbeing. Through everyday acts of observation, adaptation, and navigation, individuals generate knowledge about how environments are encountered and experienced.

Such knowledge remains largely absent from conventional discourse. Buildings are often evaluated through technical, aesthetic, or functional criteria. Yet experiences of epilepsy suggest that architectural environments are understood not only through what they are, but through how they are lived.

Architecture, Atmosphere and Human-Environment Interaction

A key contribution of epilepsy to architectural thought lies in its capacity to foreground human-environment interactions. Architecture is frequently interpreted through visual representation. Drawings, models, and photographs continue to shape both architectural education and practice. However, lived experience reveals that architecture extends far beyond the visual.

Architecture is distinctive because it is inhabited. Unlike many aesthetic forms, buildings are not simply observed; they are entered, occupied, navigated, and dwelled within. Experiences of architecture unfold over time, engaging multiple senses and producing atmospheres that shape how people feel, act, and relate to their surroundings.

Atmosphere has become an increasingly significant concept within architectural theory because it acknowledges the affective and sensory dimensions of environmental experience. Atmospheres emerge through interactions between material conditions, environmental factors, and human perception. They cannot be reduced to singular architectural elements but arise through complex relationships between bodies and environments.

Epilepsy highlights the importance of these atmospheric conditions. Experiences of temperature, humidity, ventilation, sensory intensity, spatial density, and environmental stimulation may all influence how spaces are encountered. These conditions are rarely experienced in isolation. Instead, they combine to create environmental atmospheres that support or constrain participation.

Understanding architecture through atmosphere challenges assumptions that environments function as neutral containers of activity. Rather, environments become active participants in experience. Temperature alters comfort and concentration. Lighting influences orientation and sensory awareness. Noise shapes attention and cognitive effort. Spatial configurations affect movement, social interaction, and perceptions of safety.

From this perspective, architecture and epilepsy share a comparable dynamic quality. Neither can be understood as fixed or static entities. Both emerge through ongoing processes of interaction, response, and adaptation. This dynamic relationship provides an important foundation for rethinking the role of lived neurological experience within architectural research.

Climate, Variability and the Built Environment

Intertwined with architecture, climate represents another significant yet often overlooked dimension of environmental experience. Weather conditions influence how people move through cities, occupy buildings, and participate in everyday activities. These influences are not experienced equally. Individuals living with chronic, neurological, or episodic conditions may encounter environmental variability in distinctive ways.

Climate introduces a temporal dimension into discussions of architecture. Environmental conditions change throughout days, seasons, and years. Temperatures fluctuate. Light levels vary. Humidity, air quality, and weather patterns continually shift.

Consequently, experiences of environments are never entirely stable. The built environment is therefore not encountered as a fixed entity but as a dynamic condition shaped by changing relationships between bodies, buildings, and climate.

The significance of climate became particularly apparent during research and travel undertaken in India in May 2023. The intensity of heat, humidity, sunlight, urban density, and sensory stimulation generated heightened awareness of environmental conditions and their relationship to bodily experience. Activities that might ordinarily appear routine, such as moving between locations, spending prolonged periods outdoors, participating in public events, or travelling through unfamiliar urban areas, became mediated by considerations of temperature, fatigue, hydration, recovery, and environmental exposure.

What emerged was not merely an awareness of climate as a background condition, but an appreciation of climate as an active participant in environmental experience. Decisions regarding where to sit, when to travel, how long to remain outdoors, and when to seek refuge were continuously informed by changing climatic conditions. These decisions often unfolded unconsciously, becoming embedded within everyday navigational practices. Through this process, environmental awareness operated as a form of adaptive knowledge produced through lived experience.

Importantly, these observations extend beyond individual experiences of epilepsy. They raise broader questions concerning how architectural environments mediate climatic exposure and environmental comfort. In many contexts throughout India, shaded

thresholds, verandas, covered walkways, courtyards, and naturally ventilated spaces perform important environmental functions. Such architectural responses do not eliminate climatic conditions but instead create opportunities for adaptation, retreat, and transition between different environmental states. From a neurophenomenological perspective, these moments of transition are significant. Moving between shaded and unshaded spaces, between conditioned and naturally ventilated environments, or between crowded and quieter settings alters sensory and bodily experience. Environmental transitions influence perception, attention, comfort, and wellbeing. Consequently, architecture participates directly in shaping how climate is encountered.

The relationship between climate and architecture also highlights the limitations of approaches that separate environmental design from questions of health and wellbeing. Discussions concerning accessibility often focus upon circulation, dimensions, and physical access, while climatic and atmospheric conditions remain secondary considerations. Yet lived experiences of epilepsy suggest that thermal comfort, environmental predictability, sensory intensity, and opportunities for recovery may be equally important in shaping experiences of participation.

This observation resonates strongly with emerging discussions surrounding neuro-inclusive design. While standards such as PAS 6463 recognise the significance of sensory environments, thermal comfort, wayfinding, familiarity, and opportunities for refuge, experiences of navigating varied climatic contexts demonstrate how these factors rarely operate independently. Instead, they combine to

produce complex environmental atmospheres that influence how people inhabit space.

Climate therefore provides an important lens through which to reconsider architecture. Rather than treating buildings as static objects, climate foregrounds architecture as a dynamic mediator between bodies and environments. Buildings filter light, regulate temperature, provide shelter, frame movement, and organise encounters with the surrounding world. These functions become particularly visible when viewed through experiences of bodily variability and neurological difference. Recognising climate as part of architectural experience also expands discussions concerning contemporary environmental challenges. As temperatures rise and weather patterns become increasingly unpredictable, questions of heat, environmental comfort, and wellbeing are likely to become increasingly important within architectural practice. While these issues affect all building occupants, they may have particular significance for individuals whose experiences are shaped by fluctuating neurological or health conditions. Paying attention to lived experiences of climate therefore offers valuable insights into the design of more responsive and inclusive environments.

Ultimately, climate reveals architecture as a relational rather than autonomous condition. Environmental experiences emerge not through buildings alone, nor through bodies alone, but through ongoing interactions between the two. Epilepsy exposes these interactions with particular clarity, demonstrating how environmental conditions become integrated into everyday practices of navigation, adaptation, and participation.

Disability and the Unfinished Environment

As Hendren observes, 'disability reveals just how unfinished the world is'²⁰. This statement offers a productive framework for understanding the relationship between epilepsy and architecture. Rather than viewing disability as a deviation from a normative body, disability can reveal assumptions embedded within environments themselves. This perspective is particularly useful when considering epilepsy because many environmental barriers remain invisible within conventional architectural evaluations. A building may satisfy accessibility standards, provide adequate circulation, and fulfil functional requirements, yet still present challenges associated with sensory intensity, environmental unpredictability, thermal discomfort, or insufficient opportunities for refuge and recovery. Such conditions are rarely identified as architectural barriers because they are often understood as individual experiences rather than environmental issues.

Hendren's observation encourages a different interpretation. Rather than asking how disabled people adapt to environments, it invites consideration of how environments might better respond to diverse forms of embodiment. Through this lens, epilepsy does not reveal deficiencies within the body but exposes assumptions built into architectural practice. The condition reveals the extent to which environments continue to be designed around expectations of consistency, predictability, and stability. Yet lived experiences of disability demonstrate that bodies are diverse, variable, and continually changing. Conditions such as epilepsy make these

²⁰ *Sara Hendren, What Can a Body Do? How We Meet the Built World (New York: Riverhead Books, 2020)*

realities particularly visible because they challenge assumptions that bodily experience remains stable across time and circumstance. Through this lens, epilepsy reveals aspects of architecture that often remain unnoticed. Lighting conditions that appear ordinary may produce discomfort. Overheated spaces may become difficult to occupy. Complex spatial arrangements may generate uncertainty. Environments designed according to normative expectations can become sites of exclusion not because access is physically impossible, but because bodily variability has not been considered.

This observation shifts attention away from individual bodies as sources of difficulty and towards the relationship between bodies and environments. Disability emerges through interactions between embodiment and environmental conditions. Architecture therefore plays an active role in shaping experiences of inclusion and exclusion. Viewed in this way, epilepsy offers valuable insights into the ongoing development of inclusive architectural practice. Disability highlights the ways in which exclusion may emerge through interactions between bodies, environments, and changing circumstances. Environmental factors including temperature, sensory intensity, spatial organisation, and environmental predictability actively participate in shaping how spaces are inhabited, navigated, and understood.

Recognising this relationship does not require architecture to eliminate all forms of difficulty or uncertainty. Rather, it requires acknowledgement that environments are never neutral. They support certain forms of occupation while constraining others. Disability provides a valuable perspective through which these dynamics can be understood and addressed.

Designing for Rhythms

The experiences discussed throughout this paper point towards an alternative way of thinking about architecture. Rather than designing solely for standardised users or fixed conditions, architecture might be understood as designing for rhythms. Rhythms exist within bodies, environments, and climates. They include cycles of activity and rest, concentration and fatigue, movement and pause, stimulation and recovery. For people living with epilepsy, these rhythms may be particularly apparent because everyday life frequently involves responding to bodily and environmental variability. Designing for rhythms does not imply designing specifically for epilepsy. Instead, it involves recognising that variability is a fundamental aspect of human experience. Bodies change across time. Environmental conditions fluctuate. Needs evolve according to circumstance. Inclusive environments therefore benefit from flexibility, adaptability, and sensitivity to diverse forms of occupation. Such an approach moves beyond binary distinctions between accessible and inaccessible space. It encourages consideration of atmosphere, sensory conditions, environmental comfort, opportunities for refuge, and the diverse ways people experience and navigate environments.

In this context, lived experience becomes an important source of architectural knowledge. Through adaptation, awareness, and environmental navigation, people living with epilepsy develop forms of spatial and environmental understanding that are often absent from conventional design processes. Such experiences highlight the value of engaging directly with embodied perspectives when considering questions of wellbeing, neurodiversity, climate, and

inclusion within the built environment. Designing for rhythms therefore involves recognising variability as an ordinary aspect of human life rather than an exception to it. Such an approach would encourage greater attention to atmosphere, climatic comfort, sensory conditions, temporal change, and opportunities for adaptation. It would acknowledge that inclusion is not achieved solely through access to space but also through the capacity to inhabit, navigate, and participate within environments in meaningful ways.

Conclusion

This paper has touched upon epilepsy as a means of understanding relationships between body, climate, and architecture. Drawing upon neurophenomenology, disability studies, and lived experience research, it has argued that epilepsy offers a distinctive perspective on architectural experience by foregrounding fluctuation, environmental awareness, and human-environment interaction.

Rather than existing exclusively within the body, experiences of epilepsy emerge through ongoing encounters with architectural and climatic conditions. These encounters generate forms of environmental knowledge that remain underrepresented within conventional architectural discourse. Attention to lived experience reveals architecture as a multi-sensory, dynamic, and relational phenomenon, shaped through continuous interactions between bodies and environments.

Building upon Hendren's note that disability reveals the unfinished nature of the world, the paper suggests that epilepsy reveals the unfinished nature of architectural environments. Conditions often assumed to be neutral emerge as active participants in experiences of comfort, participation, orientation, and wellbeing. Recognising these relationships expands current discussions surrounding neurodesign, environmental experience, and inclusive architectural practice.

Ultimately, epilepsy offers more than a subject for architectural consideration. It provides a means of understanding how environments are inhabited, negotiated, and experienced. Through greater attention to lived experience, climate, and bodily variability, new possibilities emerge for imagining architecture that responds more carefully to the diverse and changing realities of human life.

Recent developments demonstrate a growing recognition that environments influence neurological experience and wellbeing. Yet epilepsy remains underrepresented within these conversations. By positioning lived experience of epilepsy as a form of environmental knowledge, this paper suggests that neuro-inclusive design can be further expanded through greater attention to fluctuating and episodic conditions. Such an approach moves beyond accommodating difference towards understanding how architectural and climatic environments participate in the production of experience itself.