

Fostering Emotional Well-Being Through Human-Centered Design: Transforming Architecture For Dignity and Belonging

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AUTHOR BIO

Ruilang Li is an entrepreneur and innovator with a strong focus on human-centered design and engineering. He has designed and 3D-printed custom assistive devices to improve the independence and dignity of people with disabilities. Ryan is also the inventor of an award-winning ocean aquaculture robot, which integrates robotics and AI to enhance sustainability and safety in underwater farming. Beyond his engineering work, he founded his school's first Maker Space, where he mentors peers in product design and creative problem-solving. He also launched Ruilan Intelligent Innovation (Shenzhen) Technology Co., Ltd. to bring his prototypes into real-world application. Ruilang's work reflects his belief that technology should not only solve problems but also empower people, combining innovation with empathy to create meaningful impact.

ABSTRACT

This paper explores how human-centered architectural design can transform rationalist and modernist paradigms into spaces that foster deep emotional connections between people and their environments. Here, "emotion" transcends aesthetic preference, encompassing complex psychological and social states such as dignity, care, autonomy, collective memory, and a sense of belonging. Through a critical analysis of architectural theories, case studies, and interdisciplinary research, this study evaluates design techniques, such as participatory processes, multi-sensory integration, and culturally responsive forms, that translate these emotions into tangible spatial experiences. By examining the interplay between human-centered design and mental health, this research demonstrates how architecture can actively support emotional well-being, addressing challenges like anxiety and disconnection in urban environments. Drawing on examples like the Maison Bordeaux and Ningbo Museum, the paper argues that architecture must prioritize embodied cognition and cultural identity to create spaces that inspire, sustain, and nurture human dignity and community cohesion.

Keywords: *Human-centered design, emotional well-being, architecture and mental health, dignity and belonging, embodied cognition, participatory design, multi-sensory architecture, cultural identity, spatial narrative, built environment, sustainable design, accessibility.*

FROM CLASSICAL IDEAL TO HUMAN CENTRIC

Society faces the challenge of widespread mental health issues. A World Health Organization (WHO) report indicates that nearly one billion people suffer from mental disorders, a number that has increased by 25% since the COVID-19 pandemic (World Health Organization, 2022). Because we now occupy indoor spaces for an average of 90% of our day (Klepeis et al., 2001), architecture, as the vessel of our daily lives, has a profound impact on life.

Renowned architect Tadao Ando has said that architecture is not simply an act of building a space but an expression of emotion and spirit (Ando, 2003). Disregard for human emotion on the part of architects can lead to a loss of dignity, care, and cultural identity (Augé, 1995). Hence, there is an unquestionable need for a change in the logic of contemporary architectural design, toward design for human beings and their emotional life.

The concept of the "human" and its relationship to architecture has a long history in architectural theory. The Roman architect Vitruvius, in his book *De Architectura*, related architecture to the proportions of the human body, laying the foundation for a classical aesthetic principle measured by the human form (Vitruvius, trans. 1960). During the Renaissance, Leonardo da Vinci's Vitruvian Man revisited this idea, portraying an idealized human body perfectly inscribed within a geometric shape. This became a representation of rationality and symmetry that shaped Renaissance architecture (Wittkower, 1971). However, even as humanism emerged, its impact on architecture was still mathematical rather than experiential.

Le Corbusier famously defined a house as "a machine for living," claiming "form follows function" and "ornament is crime" (Le

Corbusier, 1986). This disregarded physical sensation, feelings, and culture in favor of efficiency and universality and the notion of humans as functioning units. His idea of "The Modular" (Figure 1) uses humans with a height of 1.83m to give a scale to certain spaces. This failed to acknowledge human difference and has resulted in a proliferation of homogenized, soulless "International Style" buildings worldwide, creating architecture and urban spaces that eradicated identity and a sense of belonging in architecture globally (Figure 2) (Frampton, 2007).

This systematic neglect of emotional and sensory experience has led to a disconnection between architecture and people's spiritual needs, with architectural forms becoming standardized and easily reproduced. This has turned many urban spaces into what French anthropologist Marc Augé defined as "non-places." In these environments—airports, highways, and chain hotels—which lack historical, cultural, and interpersonal accumulation, individual emotional experience is highly compressed, making it difficult to establish a sense of belonging and identity (Augé, 1995).

In addition to this disconnect, mental health is adversely affected by a lack of natural light, ventilation, and natural building materials. The resulting "Sick Building Syndrome" increases the risk of anxiety, depression, and other disorders (Redlich et al., 1997). Neuroscientific research reinforces the argument that our surroundings and the constructed environment may negatively affect mental health (Hunecke et al., 2007). A study from Harvard University on the amygdala, the part of the brain processing emotion, revealed that, in contrast to those living in suburbs or the countryside, inhabitants of poorly designed city centers suffer from significantly more anxiety and fear (Lederbogen et al., 2011). This suggests that

design ignoring emotion can be aesthetically poor and, at a deeper level, fail to recognize basic human psychological needs.

How can architecture be transformed from a passive physical space into a human-centered approach that holds, inspires, and sustains a broad range of human emotions? "Emotion" as defined here transcends conventional aesthetic preference and is, rather, a complex psychological and social state, including individual dignity, care, autonomy, as well as collective memory and a community's sense of belonging (Pallasmaa, 2012). This process of embodiment is an "exchange" achieved through multi-sensory interaction between architecture and people. Human-centered architectural design uses its unique forms, materials, light, and spatial layouts to translate this abstract, broad range of emotions into tangible physical experiences. There follow three different aspects of human-centered architectural design which take account of elements of this complexity: Dignity and Care, Cultural Identity, and Spatial Narrative.

DIGNITY AND CARE

The centrality of emotion in human-centric architecture is reflected firstly in its respect for the individual's body and mind. Architecture is no longer a passive container for the human form; it actively responds to bodily needs, granting autonomy. Finnish architect Juhani Pallasmaa emphasized in *The Eyes of the Skin* that the body is the core of spatial perception, and architectural design should be based on embodied cognition, creating a physical environment that affirms individual existence and elevates their sense of dignity through space, light, and materials. This design goes beyond mere functional satisfaction, using the "empowerment" of the individual to achieve a deep level of care for both body and mind

(Pallasmaa, 2012). His theory shows how dignity and care can be conveyed through texture, scale, temperature, and light.

Maison Bordeaux, OMA's design of a villa for a disabled person, is a powerful case in point. Its core design is a massive hydraulic platform that allows the residents to move freely between three floors (Figure 3), with the platform programmed to function as different rooms as it moves to different floors. This design grants the resident maximum control over space, thus breaking the social isolation and helplessness often associated with physical disability. The platform is not just a tool but a spiritual liberation; it uses the language of architecture to convey the message, "You deserve a complete spatial experience," affirming the residents' dignity (Kroll, 2024). The Gando Primary School in Burkina Faso, designed by Francis Kéré, made use of local construction skills, thereby granting community members a sense of ownership, validating their expertise, and enhancing collective dignity (ArchDaily, 2024b). The social housing project, Quinta Monroy, designed by ELEMENTAL in Chile, demonstrates care and respect by bestowing "the right to create" on the users. The design deliberately leaves half the building unfinished so that residents can extend their homes to meet their aesthetic and programmatic needs, making them co-designers and fostering dynamic, evolving communities (Figure 4) (ArchDaily, 2024c).

CULTURAL IDENTITY

Emotion is also social and cultural. Architecture is culture in material form and carries the collective memory and cultural identity of a community. Christian Norberg-Schulz's theory of "genius loci" emphasizes that architecture's mission is to "turn a place into a space" by respecting and strengthening local geographical and cultural

characteristics. This transformation from “place” to “space” is achieved by building an emotional bond between individuals and a specific location. This connection is rooted in daily routine, stories, and collective memories of the built environment. The design language of the architect makes these social emotions material and strengthens cultural identity and a sense of collective belonging (Norberg-Schulz, 1980).

To give two examples: the Dongziguang Village in Hangzhou evokes a strong sense of cultural identity and collective memory among villagers by reinterpreting traditional residential forms. The open courtyards and semi-public spaces together have helped rebuild neighborly relationships by shaping people’s collective activities, fostering a strong sense of community belonging (JTL Studios, 2024). The Ningbo Museum, designed by Wang Shu, uses old bricks and tiles salvaged from demolished historic buildings in local villages to carry collective memory (Figure 5). Each brick and tile, carrying its own history, encourages visitors to feel the significance of that history and experience a sense of belonging. This reuse of old materials is not just an aesthetic innovation but an act of respect for memory and feeling (Shu, 2024). These designs show that architecture can be more than simply a structure. It can be a meeting place of culture, history, and emotion.

SPATIAL NARRATIVE

Architectural space guides human experience through its dynamic organization and multi-sensory elements, creating an emotional “narrative” or “path.” As Peter Zumthor says, a building is a large instrument that collects and amplifies sounds, providing a sensory journey through its form and materials. A carefully controlled sequence of light, density, temperature, and sound will anticipate and guide the user’s emotional flow. This process builds a “mental map” within the building, allowing the

user to experience an emotional progression as they move (Zumthor, 2006).

Zumthor’s Therme Vals is a perfect example. Built in 1996 as a hotel and spa, its design deliberately makes the entrance dark and narrow, forcing visitors into a state of introspection. Subsequently, by guiding them into different pools and cleverly using skylights, stone textures, and the sound of water, it creates an emotional path from oppression to release, from darkness to light, culminating in a tranquil, sacred experience (Figure 6) (Zumthor, 2006). Diller Scofidio + Renfro’s Blur Building takes this a step further. By producing fog, it blurs traditional definitions of architecture by intentionally depriving visitors of trust in their sight. The design forces them to rely on hearing, touch, and balance to explore the space, elevating the architectural experience to a philosophical level. This sensory “recalibration” compels visitors to re-establish their connection with the space and each other, leading to profound sensations and emotions (Figure 7) (Archello, 2002).

REFLECTION AND OUTLOOK

Despite the positive impact of certain projects that explore emotion in architecture, there are challenges, including commercialization in real estate development. In such designs, the priority is often to pack as many units into the available space as possible. Feeling is subservient, a marketing device that relies on superficial elements of color, ornament, and material to thrill the viewer momentarily. This is simply commodification of the human intention of human-centric design (Mallgrave, 2018).

Furthermore, there are few quantitative benchmarks. In 1990, the Americans with Disabilities Act (ADA) was published as a guide to designing spaces better meeting the needs of

disabled people. It was a great step forward in human-centric design, as it enhanced the dignity of disabled people as they navigate buildings. However, it has had limited impact on design for those without disabilities (U.S. Department of Justice, 1990).

In 2014, the WELL Building Standard was initiated, which seeks to improve human habitation by measuring the health and well-being of occupants (Figure 8). It quantifies the provision of air and light and promotes mental health programs, including quarterly education on mental health, annual training, weekly mindfulness sessions, healthy work hours, and space for relaxation (International WELL Building Institute, 2023). Although this is a step toward using architecture to resolve mental health issues, these benchmarks only skim the surface of human emotion in architecture. While adept at measuring physical quantifiable metrics, they struggle with capturing complex, subjective “broad emotions,” for example, “sacredness” as at Therme Vals or “belonging” as evoked by the Ningbo Museum with its walls of tiles and bricks. There is no measuring these using spreadsheets. Also, when compared with well-established standards like Leadership in Energy and Environmental Design (LEED), the WELL Building Standard remains niche. Data from the International WELL Building Institute (IWBI) suggests that, as of 2023, approximately 14,000 projects worldwide have received or are pursuing WELL certification, compared with over 100,000 projects certified under LEED (International WELL Building Institute, 2023; U.S. Green Building Council, 2023). This indicates that while the concept of healthy buildings is gaining recognition, its levels of adoption and influence remain low, failing to achieve a deep, universal impact on the architectural industry.

In an age of increasing mental health issues, human-centered design to address

emotional needs is crucial. Architects must continue to explore the connection between emotion and space and give a sincere response to genuine needs and humanistic care. Only when the balance between rationality and sensibility is met can architecture truly become a shelter for humanity, with warmth, memory, and soul.

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