

Session 2

Andréa de Paiva

Behavior and the Embodied Mind: Designing for Cognitive Resilience

The spaces we inhabit profoundly shape our minds and bodies. Our current context that converges aging populations, heightened stress levels, and urban expansion calls for a renewed focus on creating environments that support cognitive well-being over the long term. How can designers leverage this understanding to create environments that enhance brain resilience and support cognitive function even in the face of age-related decline or neurological challenges?

As neuroarchitecture develops and reaches new academics, students and practitioners, discussions on how the brain and the mind are influenced by the physical environment have become more common. However, the crucial role of the embodied mind – the interplay between our physical selves and our cognitive processes – is often overlooked. Our experiences are not solely mental constructs but are deeply tied to physical interactions within built environments.

As designers create spaces, they are at the same time restricting and affording experiences resulting from the brain-body-environment interaction. Not only that, but neuroscience has shown that our experiences shape our brains both functionally and structurally, as evidenced, for instance, in studies investigating how engaging frequently in physical activity can enhance cognitive function and promote neuroplasticity. This means that there is a “cumulative” effect of our experiences over time. In other words, experiences can have a lasting impact on the brain, influencing our cognitive abilities throughout our lifespan. Thus, spatial design not only shapes experiences that we engage in, but it also, ultimately, helps to shape our brain and cognitive function.

This lecture will explore the dynamic and interconnected relationship between the body, behavior and the environments we inhabit, with a particular emphasis on healthy behaviors and their impact on cognitive reserve, which is the brain's ability to adapt and maintain function despite damage or aging. We will explore topics such as environmental enrichment, brain plasticity and cognitive reserve, as well as their implications for architectural practice, highlighting the importance of considering individuals as active agents within spaces. Finally, we will explore potential strategies for integrating neuroarchitecture into design practice particularly by considering how the built environment restricts, affords, induces, and optimizes human behavior. By embracing science-informed design and prioritizing embodied experiences in our design decisions, we can create environments that not only meet our basic needs but also nurture our cognitive well-being and enhance the overall quality of life.