

New Research: Modernist Architecture May Be Bad for Health

The neurobiology of visual processing shows that visually coherent, approachable, and beautiful traditional architecture is optimal for human well-being.

WASHINGTON, DC, US, January 19, 2022 /EINPresswire.com/ -- Analyzing data from multiple scientific sources, this just published [landmark article in the prestigious Urban Science Journal](#) answers the question, "What happens in your brain when you walk down the street?"

Its authors, a neuroscientist, a mathematician, a physicist, and an architect explain that we perceive urban space the same way as our ancestors perceived the landscape of our emergence, the African savannah. With significant implications for the design of cities based on our perception of streetscapes, the authors conclude that, in order to promote wellbeing, we should design streetscapes to "please" our brain.

Because of their prevalence in nature, our brains evolved to be fluent in the visual language of multiple fractals, patterns that self-repeat at different scales—such as we see in the patterns of trees, water, mountains, and clouds. Since the visual brain is so well-equipped to process these multiple fractals, their presence facilitates object recognition, navigation, and it gives us an overall experience of beauty that promotes well-being.

Based on the makeup of the human brain, the authors sequence and characterize the earliest



Figure 1. Similar to the experience in the African Savanna, the brain undergoes in a traditional environment, a stress reducing, positively reinforced fractal aesthetic experience. The Piazza dell'Anfiteatro, Lucca, and the Ngorongoro Crater, Africa.

stages of visual processing. Laying this perceptual foundation validates the common urban experience we all share—places most people recognize as beautiful—or ugly. The perception of multiple fractals—a fundamental human characteristic—is among the first things to be processed, within 50 ms.

- Traditional styles around the world typically feature multiple fractal patterns. That multiple-fractality gives an overall experience of beauty that fosters well-being, with such striking benefits as high as a 60% reduction in observers' stress and mental fatigue.
- This is true for both elaborate buildings—the Taj Mahal, Beijing's Summer Palace or the Original Penn Station—and simple “vernacular buildings,” e.g., the brownstones of Brooklyn, traditional Balinese Angkul-Angkul homes, or Georgian townhouses.

- But since World War II we have been building in a manner dissociated from the human experience. The urban design and construction errors of the last century have systematically created urban scenes devoid of beauty. The absence of multiple fractality in Modernist buildings and spaces renders them “incoherent” to the human brain—causing stress in the human experiencing them.

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To promote well-being, we should design buildings and streetscapes to “please” our brain... [That is] a humanistic path based on human neurobiology for the future of urban design.”

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Figure 2. Traditional architectures do the same things in drastically different styles because they typically feature multiple fractal patterns. These give an overall experience of beauty that fosters well-being, and a reduction in observers' stress

The authors' summary of the physiology and psychology of visual perception brings clarity to the sense of what environments we need to create to measurably increase people's well-being. The analysis of the multiple fractals of architecture and urban design sheds light on why traditional buildings and classic planning techniques provide the most healthful and useful urban environments long term.

In the process, the article uncovers a humanistic path based on human neurobiology for the

future of urban design. For the best performance and well-being of people, the authors propose a scientific architecture and urban design toolkit that reintroduces health-promoting designs into our cities.

REAL WORLD IMPLICATIONS

- Impacting users, tourists, owners, developers, cities, and governments, stakeholders may find themselves liable for the negative implications of Modernist buildings, including potentially damaging impacts on health and wellbeing.
- Parties to development should consider traditional architecture and classic planning as an investment in the wellbeing not only of people—but of their portfolios and holdings.

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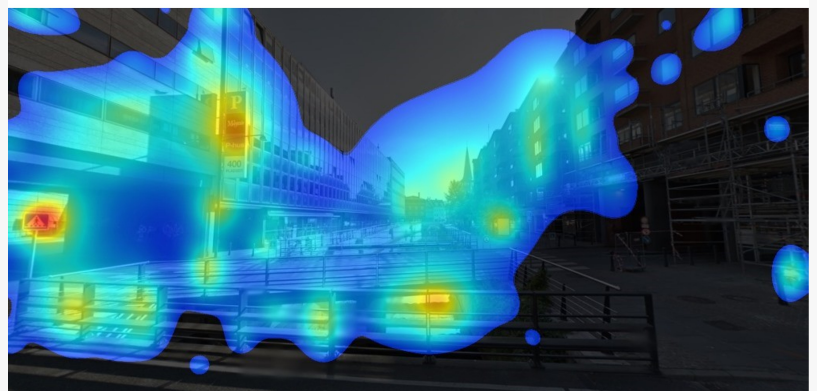


Figure 3. The brain does not perceive Modernist townscapes because there is not enough in its details or forms to latch onto. To the brain, the Aarhus River in Aarhus, Denmark, now a choked concrete channel in a harsh cityscape, is incomprehensible.

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