The Importance of Experience in the Built Environment

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Topics

1. Felt Experience
2. Scientific Measurement
3. ANFA Academy of Neuroscience for Architecture

What do you experience when you walk into a building?

Safety **Welcome** **Beauty** **Privacy** **Task fitness**

Calmness **Spaciousness** **Focus** **Belonging**

Awe **Warmth** **Inspiration** **Energy**

Are these perceptions?

Or post-hoc confabulations?

Three ways to find out

Ask them

Likert scales · Semantic differentials · Experience sampling

Problem: people tend to report what they think they should feel

Example: Renovations are appreciated even when they worsen air quality

Test without telling

IATs · Adaptive preference · Behavioral proxies

Bypasses the narrative self

Measure their bodies

Heart rate · Skin conductance · Cortisol · Eye tracking

Bodies do not confabulate

But why does the body respond?

Because our brains are affected in certain ways by architecture

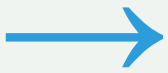
Curved walls  ↓ Amygdala → ↓ Cortisol → Safety

Vartanian et al. 2013

Nature views → Parasympathetic → ↓ Heart rate → Recovery

Ulrich 1984; Kaplan 1995

High ceilings

 Relational processing → Creativity

Meyers-Levy & Zhu 2007

With mechanisms, we can predict

— not just replicate things we've learned

High ceilings don't always facilitate creativity

10 ft = creative

8 ft = focus

They worsen concentration

Meyers-Levy & Zhu, 2007

Why do people prefer curved to rectilinear walls?

Intuition: Curves are friendlier

Science: Effect is 6x larger for stress than beauty

Intuition was right — for the wrong reason

Tawil et al. 2022, N=198

Wood in interiors is stress reducing and restorative

≤ 45%

wood coverage lowers blood pressure — BUT beyond that, it reverses

Rice et al. 2006

$800K/year

lost in a 200-person office from 7 dB of noise

A 7 dB increase in noise cut productivity by ~3% and impaired cognitive function without reducing effort, implying true capacity loss rather than laziness

Dean 2024, N=128

Acoustic treatment: $50K once

Payback: 23 days

The Value Proposition

Intuition: Open plans help collaboration

Science: Face-to-face drops 70%. Email rises 50%.

Bernstein & Turban 2018, Harvard

ANFA

Academy of Neuroscience for Architecture

Founded 2000 · La Jolla, California · anfarch.org

Architects and scientists — together

Experience

How spaces feel

Performance

How spaces help us think & work

Social life

How spaces shape interaction

Mood

How spaces affect emotion & wellbeing

~500 members · Growing fast · International chapters worldwide

Biennial conference in La Jolla · Research grants · Courses

Not intuition. Not opinion.

Evidence.

25 years of architects and neuroscientists
learning to speak each other's language

Intuition: Nature sounds in classrooms help focus

Science: Birdsong and water sounds increased distraction and impaired attention-shifting tasks

Visual nature (plants, daylight) helps.
Auditory nature competes for the same attentional resources the task needs.

Hedblom et al. 2019; Yin et al. 2023

Intuition: Red rooms feel warmer, blue rooms cooler

Science: No significant effect. Color does not reliably shift thermal perception.

The 'hue-heat hypothesis' — one of the most cited claims in interior design — has failed to replicate in controlled experiments.

Chinazzo et al. 2021 (VR); Baniya et al. 2018; Eurac terraXcube 2024

Intuition: Removing walls increases collaboration

70%

drop in face-to-face interaction

50%

rise in email and messaging

People compensate for lost acoustic privacy by withdrawing socially.

Bernstein & Turban 2018, Harvard (wearable sensors + email logs)

Design for experience deliberately

— or pay for it accidentally