When Green Doesn't Register: User Disconnect in Certified Sustainable Buildings

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CITC GLOBAL
Construction in the 21st Century

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LUMS: Academic Standing & Institutional Profile

Founded in 1984 as an independent, **not-for-profit**, research-led university in **Lahore, Pakistan**

- **5 schools** across business, humanities, engineering, law, and education.
- **SDSB** is **AACSB-accredited**, placing it among the **top business schools globally**.
- **QS Global MBA Rankings 2025 → Ranked 201+ globally**
- **QS Executive MBA Rankings 2024 → Ranked 111–120 globally** and **14th in Asia–Pacific**
- Emphasis on **scholarship, pedagogy, and societal contribution** through research and leadership development.
- Alumni hold leadership roles across **industry, public sector, civil society, and academia**.

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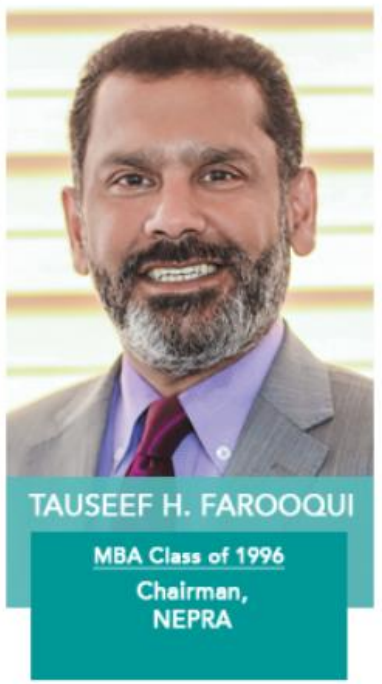

LUMS Campus & Sustainability Orientation

- **100-acre**, purpose-built **residential academic campus** in **Lahore**.
- Designed as a **walkable**, **green**, and **human-scale** environment:
- Shaded courtyards, lawn quadrangles, and low-rise brick architecture.
- **Yusuf Shirazi** Complex will be a **LEED-certified facility**, reflecting sustainable design standards.
- Solar energy integration across academic and housing blocks.
- Efficient HVAC, lighting, and water management systems.
- Campus supports a **living–learning community** where academic, residential, and social spaces are integrated.

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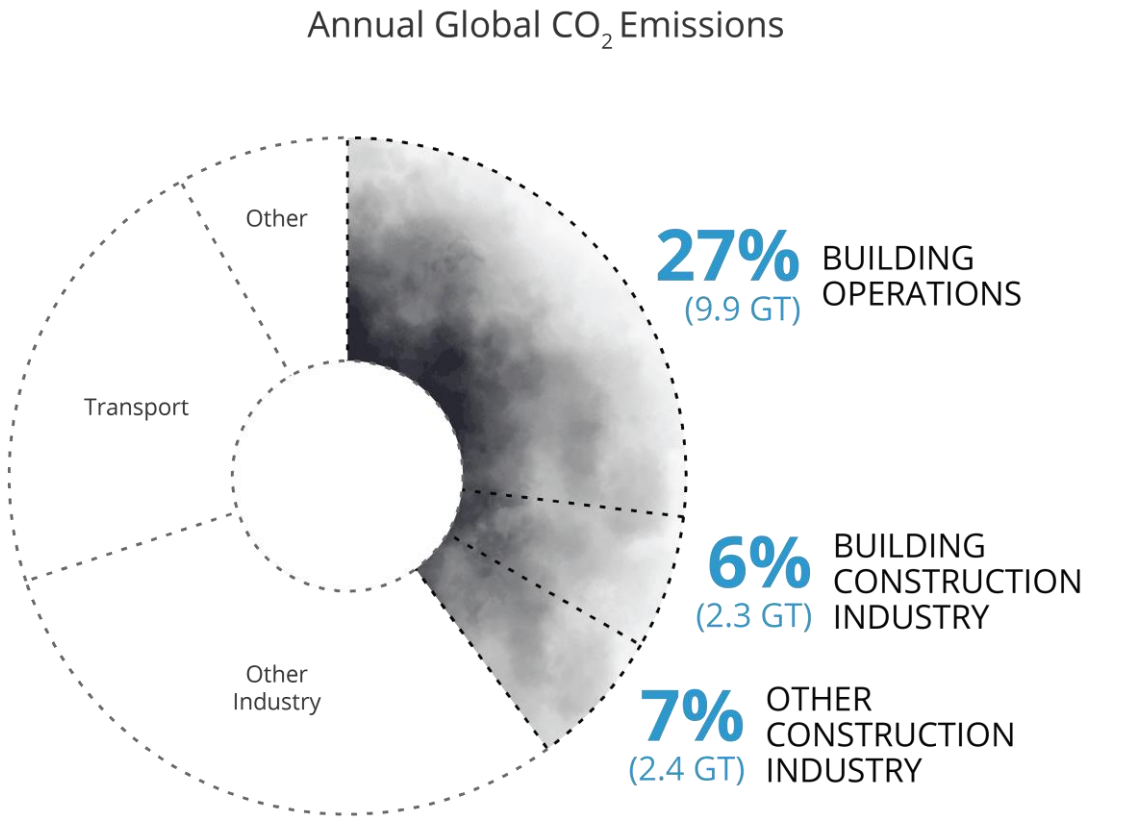
Why Buildings Matter

- Buildings = 20–40% global energy use; ~1/3 GHG emissions
- Construction industry is closely intertwined with sustainability agendas
- So green buildings *should* matter a lot — economically, socially, environmentally



Building Construction Industry and Other Construction Industry represent emissions from concrete, steel, and aluminum for buildings and infrastructure respectively.

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Green Building Certifications as Global Legitimacy Systems

- LEED, BREEAM and similar systems have become global benchmarks for sustainable construction (Goubran, 2024; Darko & Chan, 2016)
- They are intended to **reduce environmental impacts** and **provide healthier indoor environments** (Yudelson, 2010; Darko, Zhang & Chan, 2017)
- Certification frameworks emphasize **quantifiable, technical performance criteria** (Pérez-Lombard, Ortiz & Pout, 2008; Menassa *et al.*, 2012)
- Yet **occupant engagement and recognition** remain peripheral in certification processes (Deuble & De Dear, 2012; Lam *et al.*, 2010).

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The Missing User

- **Green buildings are designed to improve both performance and occupant experience** *(Yudelson, 2010; Darko & Chan, 2016)*
- But **occupant awareness and engagement are often not embedded** in certification processes *(Deuble & de Dear, 2012; Lam et al., 2010)*
- Research shows **mixed outcomes** in comfort and satisfaction even in certified buildings *(Paul & Taylor, 2008; Gou, Lau & Chen, 2012)*
- Some users only display a **"forgiveness factor"** when they *know* the building is green *(Deuble & de Dear, 2012)*

Therefore....*Certification does not guarantee that users recognize, value, or experience the building as "sustainable."*

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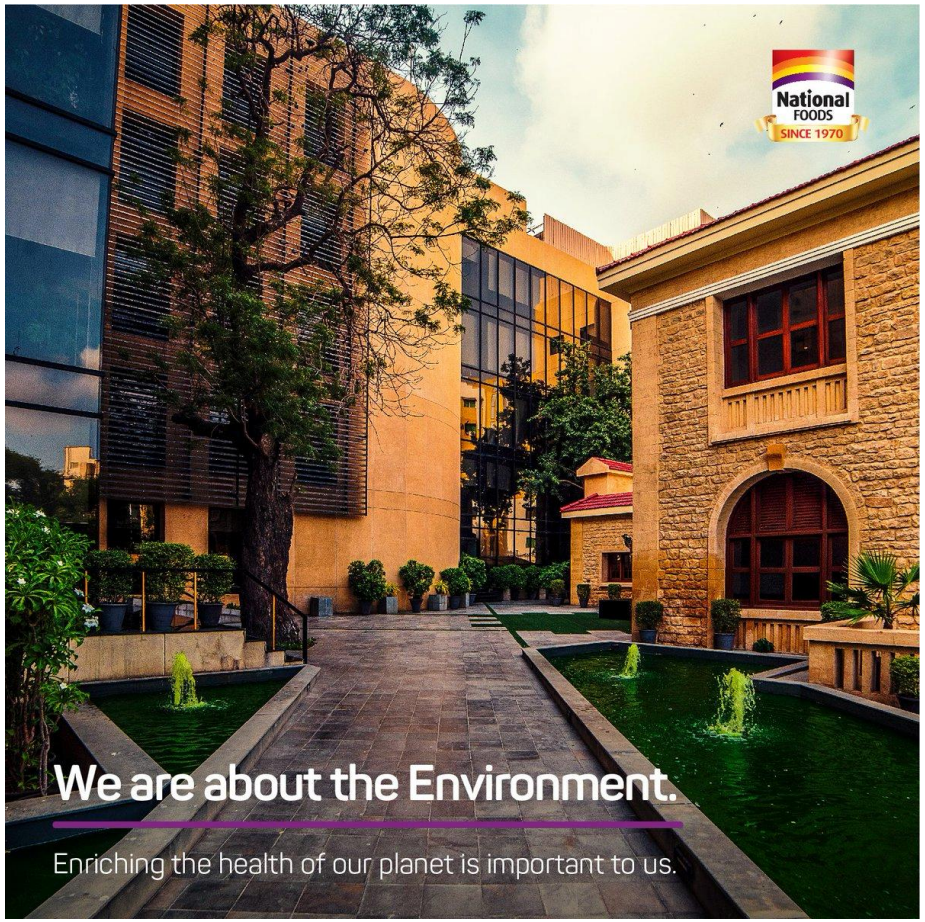
Certification Without Connection — A User-Level Paradox (the ‘Case’)

- One of Pakistan’s earliest LEED-certified industrial facilities
- **Early adopter**, driven by international buyer pressure
- **Industrial**, not office or residential → less commonly studied.



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Data & Method

- The New Ecological Paradigm (NEP) scale is a widely used measure of environmental orientation that captures individuals' pro-environmental worldviews, including beliefs about ecological limits, human–nature relationships, and environmental responsibility. Higher scores indicate stronger pro-environmental orientation (Dunlap, Van Liere, Mertig, & Jones, 2000).
- Occupant survey: NEP scale used + satisfaction and comfort
- Semi-structured interviews

Analytical approach:

abductive theorizing → case findings → CUR framework

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Table 1. Multi-level Framings in Green Building Scholarship and Their Implications

Level of Analysis	Core Focus (Study)	Sector / Context	Implication for User–Building Connection
Individual (micro)	User awareness and comfort perceptions (*Deuble & de Dear, 2012*)	Commercial office buildings (academic offices)	Occupants' ecological awareness shapes tolerance of discomfort, but highlights dependence on user recognition of green intent.
Project (meso)	Decoupling as coping mechanism (*Vo, 2016*)	Green building projects (construction/project management)	Project actors may symbolically comply with sustainability goals, showing how user experience can be sidelined during delivery.
Organizational (meso-macro)	Influence of external stakeholders on green behaviour (*Fu, 2020*)	Construction/real estate organizations	Green practices are often adopted to satisfy external pressures rather than internal user needs, limiting user integration.
Community/ Identity (meso)	Place attachment through green buildings (*Cole et al., 2021*)	Mixed-use and residential buildings	Sustainable design can foster identity and belonging, underscoring the social dimension of user–building connection.
Institutional (macro)	Certification linked to global sustainability agendas (*Goubran, 2024*)	Global sustainability / certification systems	Certification strengthens institutional legitimacy, but risks detaching from everyday user recognition and experience.

Across the above levels, a critical *micro-level* gap remains. By employing the New Ecological Paradigm (NEP) scale in the case study, our research engages this gap, linking **occupants' pro-environmental worldviews** to their **(non-)recognition of certified sustainability.**

Findings: *High Pro-Environmental Orientation, Satisfaction & Comfort* and *'Green' awareness*

Table 2. Stylized Facts from the Case Study

Dimension	Finding
Occupant Environmental Values	High pro-environmental orientation (average NEP score = 4.4)[1]
Satisfaction & Comfort	Reported moderate-to-high workplace satisfaction and comfort
Awareness of Certification	Incredibly low awareness of the building's LEED/green certification
Organizational Motivation	Certification driven by strategic considerations linked to international buyers, not by user consultation or engagement
User–Building Connection	No strong cultural or identity-based linkage between occupants and the building's sustainability profile

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Certification Without Connection — A User-Level Paradox

Certified Sustainability (Technical + Institutional) ≠ **User Recognition / Connection (Social + Lived Experience)**

A building can be **certified green** *without ever being experienced as green* by the people who use it.

- In our case, the building **achieved LEED certification** — a recognized global sustainability signal (Goubran, 2024).
- Users working inside it showed **strong pro-environmental worldviews** *(NEP mean score = 4.4)* — they **care** about sustainability (Dunlap et al., 2000; Deuble & de Dear, 2012).
- **Yet awareness of certification was extremely low** — users did not *recognize* or *identify* the building as "green."
- Certification was **oriented toward external legitimacy** (international buyers/supply chain stakeholders), rather than **internal user engagement** (Fu, 2020).
- **Result:** Sustainability was **achieved technically *but not lived socially*** — a form of **user-level decoupling** (Meyer & Rowan, 1977; Bromley & Powell, 2012).

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Linking to Theory: Decoupling

WE FIND that…. The very precondition for ‘social connection’— an *awareness of a building’s green identity*—was missing in the case study.

By treating **decoupling theory** as the ‘explanatory probe’, the paper then theorises *certification without connection* as a form of user-level decoupling in which certified sustainability remains symbolically achieved but socially unregistered

Theorising this paradox through decoupling theory meant highlighting how **formal structures may be adopted symbolically or for legitimacy by organisations while remaining disconnected from everyday practice** (Meyer & Rowan, 1977; Bromley & Powell, 2012).

While most decoupling studies focus on the organizational level, examining how firms secure external legitimacy without substantive internal change (Tilcsik, 2010), **our findings point to a *micro-level form of decoupling*.**

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Abductive development – CUR Framework

Figure 1. Certification-User Recognition (CUR) Framework

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Table 3. Certification × User Recognition (CUR) Framework

Quadrant	Certification	User Recognition	Description	Implications
Integrated Sustainability	Present	Present	Certification and recognition align, reinforcing each other. Buildings achieve both institutional legitimacy and user embedding.	Aspirational configuration: signals both technical achievement and lived sustainability.
Certification without Connection	Present	Absent	Certification is secured but remains invisible to occupants. Legitimacy is symbolic, not socially registered.	Reveals a *recognition problem*—user-level decoupling where technical achievement fails to translate into lived experience.
Grassroots Greenness	Absent	Present	Users enact sustainability informally, without formal certification.	Shows that sustainability can be socially constructed bottom-up through user engagement and culture.
No Sustainability	Absent	Absent	Neither certification nor recognition is present.	Baseline state with limited legitimacy and weak user engagement.

Why This Matters (Implications)

<u>For practitioners:</u>

- Certification renewal should include user awareness assessment.
- Post-certification engagement strategies (signage, onboarding, storytelling, tours)

<u>For policy/certification bodies:</u>

- Make ***user engagement a tracked performance category***.

From and Ethical and Justice Angle:

- Sustainability must be **recognized**, not only installed.
- Recognition is a form of *respect* and *ownership*.
- Industrial workers deserve to *experience*, not just *enable*, sustainability.

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