

CSIR-NEERI LIVING LAB

Green & Sustainable Campus Initiative

*A science-led, data-driven platform for
climate-resilient and nature-positive CSIR campuses*

WHY A LIVING LAB?

Addressing interconnected environmental challenges requires moving beyond conventional infrastructure management to integrated, science-based, and adaptive solutions. The CSIR-NEERI Living Lab responds to this need by embedding sustainability directly into campus operations—turning the campus itself into a living laboratory with implementation.

WHAT IS CSIR-NEERI LIVING LAB?

Initiated in April 2025, the CSIR-NEERI Living Lab is a science-led, data-driven, and action-oriented framework to operationalise the Green and Sustainable Campus vision. It positions the CSIR-NEERI campus as a real-world testbed integrating:

- Sustainable campus operations
- Research inclusiveness
- Innovation and pilots

to demonstrate sustainability, climate resilience, biodiversity conservation, and nature-positive development in the framework of campus sustainability both for practise and implementation.



INTEGRATED SUSTAINABILITY DOMAINS

The Living Lab integrates multiple domains through a systems approach:

Air & Climate

- Water & Wastewater
- Waste & Circular Economy
- Energy & Carbon Management
- Biodiversity & Ecosystems



Inspired by restoration of the Panch Bhoota – Prithvi, Jal, Agni, Vayu, Akash.

KEY INNOVATIONS

- **Sustainability Matrix** – measurable indicators across resources, biodiversity, emissions, and social impact
- **Sustainability Charter** – long-term vision for green academic campuses
- **Standard Operating Procedures (SOPs)** – baseline assessment, monitoring, reporting, and continuous improvement
- **Data**-driven decision support for campus planning and operations



IMPACT ON CAMPUS

- ✓ Reduced resource consumption
- ✓ Enhanced biodiversity and green cover
- ✓ Improved energy efficiency and circularity
- ✓ Lower carbon footprint
- ✓ Demonstration of science-to-practice

SCALABILITY ACROSS CSIR

- The CSIR–NEERI Living Lab is designed for phased replication across CSIR laboratories.
- CSIR–NEERI is already extending technical support to CSIR-AMPRI and CSIR-CMERI, and stands ready to support other laboratories.

VISION STATEMENT

- Building a national network of green, climate-resilient CSIR campuses—led by science, enabled by data, and driven by action.

ROLE OF CSIR-NEERI

- Framework design & technical guidance
- Sustainability assessment & indicators
- Capacity building & training
- Technology validation & scaling
- Knowledge sharing and reporting support

EXPECTED NATIONAL VALUE

- Demonstration of CSIR leadership in sustainability
- Reduced operational and environmental costs
- Strong alignment with national climate and sustainability goals

ABOUT CSIR-NEERI

CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), established in 1958, is a constituent laboratory of CSIR created and funded by Govt. of India and falls under the Ministry of Science and Technology (India).



The institute has a national presence with five zonal centers located in Chennai, Delhi, Hyderabad, Kolkata, and Mumbai. Spanning 100 hectares, CSIR-NEERI serves as a vital ecological hotspot, supporting 83 tree species along with a rich diversity of flora and fauna. The campus serves as a Living Laboratory and Long-Term Urban Ecological Observatory (LTUEO), offering insights into urban ecological dynamics.



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