

Riya Malhotra

Building Science and Sustainability
4+ years of research, consultancy, and architecture experience

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Education

MS Building Performance & Diagnostics (2025)

Carnegie Mellon University, Pittsburgh, US (*Merit Scholarship*)

Teaching Assistant: 48-315 Environmental Systems: Climate & Energy in Buildings (Fall'24), and 48-711 Paradigms of Research in Architecture (Spring'25)

Research Assistant: Centre for Building Performance & Diagnostics - Residential electrification, post-occupancy IEQ Study, GSA Indoor Air Quality Health KPI research, Energy Modeling and Data Analysis (Aug'23 – May'25)

Bachelor of Architecture (2020)

Maulana Azad National Institute of Technology, Bhopal, India

Skills

Environmental Analysis: REM/Rate, DesignBuilder, eQuest, IES-VE, OpenStudio, Diva, Relux, Velux, ClimateStudio, Climaplus, OpenLCA, One Click LCA, Climate consultant, Pollination, Xendee, GIS, AutoCAD, 3ds Max, Rhino3D, Sketch-Up, Revit

Programming: Excel, PowerBI, Python, R Studio, Ruby, Grasshopper Scripting

Relevant Awards & Achievements

MS-BPD Master's Thesis Award | 2025; Carnegie Mellon University; Awarded for research on residential electrification and retrofits for underserved communities in Pittsburgh, PA. ([Link](#))

Adam Rozenberg Community Builder Award | 2024; Environmental Defense Recognized for leadership and impact during the Climate Corps Fellowship ([Link](#))

Roll of Honour Award | 2022; The Energy and Resources Institute's prestigious award for appreciating the excellent performance and contribution to the growth of TERI in the year 2021-22

Indo-Swiss Building Energy Efficiency Camp | 2020; Selected among 50 students nationwide for this hands-on educational camp focused on energy-efficient building design in India.

Smart Urbanism Imagining the futures of Bhopal | 2017; Integral Studio conducted by Smart City Bhopal and Institute of Town Planners India for designing a proposal for the redevelopment of TT Nagar, Bhopal (Cohort of 10 students)

Tool Development

[Building Performance Standards \(BPS\) Dashboard \(JLL\) | 2024:](#) Developed a wireframe for a 'One-Stop Shop' dashboard and calculator to help existing and prospective clients navigate and comply with evolving BPS regulations.

[CIE Standard Sky type finder \(TERI\) | 2022:](#) Contributed as a technical team member to create a database identifying prevailing sky distribution models for New Delhi and NCR, based on CIE Standard Skies.

[Eco-Niwas Samhita Design Aider Tool \(TERI\) | 2021:](#) Supported the development of an early-stage design tool to streamline implementation of the Eco-Niwas Samhita (ENS 2018) residential energy code.

[Building Materials Directory of India \(TERI\) | 2020:](#) Assisted in creating the base simulation model in DesignBuilder to conduct parametric analysis and performance comparison of selected building materials.

Professional Experience

Building Performance Intern, JLL, U.S. | Jun-Aug'25

Led energy modeling and client coordination for a 160,000 GSF LEED ID+C project, including review of mechanical and construction drawings.

Developed and calibrated OpenStudio energy model prototypes with Ruby scripting for LEED Volume submissions. Additionally, modeled a dormitory prototype in OpenStudio for a Decarbonization Tool to support energy and carbon reduction scenarios.

Data Analyst Intern, Smart Surfaces Coalition, U.S. | Sep-Dec'24

Automated Energy and Solar API integration for the Smart Surfaces Benefit-Cost Analysis Tool using Python (pandas) and GIS, enabling quantification of direct and indirect energy savings and their impact on peak demand management across cities.

EDF Climate Corps Fellow, Environmental Defense Fund and Host Organization: Jones Lang LaSalle Inc. (JLL) | May - Aug'24

Led the development of a wireframe for JLL's 'One-Stop Shop' Building Performance Standards (BPS) dashboard, conducting stakeholder engagement to prioritize functionalities and documenting BPS policies across the U.S.

Supported energy modeling research for small urban grocery stores, contributing to decarbonization tool development for Schneider Electric.

Research Associate, Sustainable Infrastructure Division, The Energy and Resources Institute (TERI), India | Aug'20 - May'23

Led a team of five as the Asia representative from TERI for the UN One Planet Network's State of Play of Circular Built Environment project, delivering a comprehensive report on key SDG-aligned recommendations for six South Asian countries

Secured \$30,000 in funding from the Government of India's Department of Scientific and Industrial Research by leading a successful proposal on advanced materials and an energy-efficient design knowledge dashboard.

Managed multiple research and green building consultancy projects across GRIHA, IGBC, and LEED, overseeing project delivery, energy and daylight simulations, audits, client coordination, and documentation.

Led the Health Audit for KL University, Vijayawada, as part of the NAAC compliance. Conducted site visits and performed safety, acoustic, and daylight measurements to assess occupant health, comfort, and building performance.

Core Working Committee Member, Mahindra -TERI Centre of Excellence Lab, TERI, India | Aug'20 - May'23

Served as lead researcher in a three-member team for the Sky Modelling for India study, conducting research, data analysis, monitoring, daylight simulations, tool development, and academic publications.

Authored the book *Daylighting: Prescription for Affordable Housing in India* and contributed as a technical team member to the development of the *Econiwass Samhitha Design Aider*, focused on building envelope studies.

Supported the expansion and outreach of lab testing infrastructure, including GHB, TPS, Emissometer, Sky Scanner, and the Solar Monitoring Station at TERI.

Key Publications

[Data Analytics and 3D LiDAR Modeling for Community Solar Integration and Strategic Energy Retrofits in Low-Income Residential Buildings](#) [Poster] / auth. Riya Malhotra, Meltem Sahin Ozkoc, Vivian Loftness, Azadeh Sawyer // Energy Week, Carnegie Mellon University, Mar' 2025

[Perception of Indoor Lighting: A Comparative Study in Physical and Virtual Environments](#) [Conference] / auth. Niloofar Nikookar, Riya Malhotra, Ankita Sinha, Azadeh Sawyer, Siobhan Rockcastle // IES Annual Conference – New York, US: [s.n.], Aug' 2024.

[Analysis of Summer Sky Type using CIE Standard Sky Model for the Location of Gurugram, India](#) [Conference] / auth. Riya Malhotra, Ankit Bhalla, Rohit Thakur and Sanjay Seth // PLEA 2022. - Santiago, Chili : [s.n.], Nov' 2022

[Circular Design in the Global South](#) [Conference] / auth. Pekka Huovila, Usha Iyer-Raniga, Christina Cheong, Riya Malhotra, Yatin Choudhary and Guillermo Penagos // Central Europe towards Sustainable Building. - Prague: [s.n.], 2022

[Circular Built Environment Highlights from Asia. Policies, Case studies and UN2030 Agenda Indicators](#) [Report] / auth. Riya Malhotra, Megha Behal, Yatin Choudhary and Tarishi Kaushik. - United Nations One Planet Network Sustainable Buildings and Construction Programme, Nov. 2021.

[Daylighting Prescription for Affordable Housing in India](#) [Book] / auth. Riya Malhotra and Megha Behal. - New Delhi: The Energy and Resources Institute, Nov. 2021.

[Effects of Lighting and Human Behaviour on Indoor Visual Comfort in Residential Buildings](#) [Report] / auth. Deepak Singh Rana and Riya Malhotra. - New Delhi: The Energy and Resources Institute, Nov. 2021.

[Guidelines for Optimum Visual Comfort Derived from Key Performance Parameters](#) [Book] / auth. Deepak Singh Rana and Riya Malhotra. - New Delhi: The Energy and Resources Institute, Nov. 2021.

Relevant Courses

Carnegie Mellon University (2023-24)

- HVAC and Power Supply for Low-Carbon Buildings
- Sustainability, Health, and Productivity ([Final Notebook](#))
- Environment 1: Climate and Energy in Architecture ([Final Project](#))
- Principles of Computing (Python, data analysis, and machine learning)
- Time Series Forecasting
- Statistical Reasoning with R
- GIS/CAFM ([Final Storyboard](#))
- Building Performance Modelling ([Simple Box](#), [IES-VE](#), [DesignBuilder](#))
- Environmental Life Cycle Assessment ([Final Project](#))
- Resilient & Sustainable Communities
- Energy Storage and Transportation ([XENDEE Case study](#))
- LEED, Green Design and Building Ratings
- Energy Finance
- Building Controls and Diagnostics
- Thesis: Ensuring Energy Security in Low-Income Residential Communities (Retrofitting Taxonomy, 15 min interval Energy data analysis, and solar energy Integration) Advisor: Vivian Loftness, DOE-funded research

Workshops and Conferences

MIT Climate and Energy Hack | 2024; Represented Carnegie Mellon Architecture at the hackathon on the theme 'Powering the future with Renewable Energy' exploring Palmatteo's Residential API (*Sponsored*)

World Sustainable Development Summit | 2023; Member of the organizing committee contributing to session coordination, event management and delegation; organized by TERI (*Sponsored*)

The 14th GRIHA Summit | 2022; Member of the organizing committee - contributed as Emcee for plenary sessions; organized by GRIHA Council; Theme: Towards Net Positive Habitats (*Sponsored*)

IGBC Advanced Training Programme on Green Buildings | 2022; organised as part of IGBC's flagship event Green Building Congress 2022; Acquired skills on IGBC ratings (*Sponsored*)

Angan | 2022; Represented TERI at the 2nd International Conference - Making the Zero-Carbon Transition in Buildings organized by Ministry of Power, and the Swiss Agency for Development & Cooperation (SDC) (*Sponsored*)

World Environment Conference (WEC22) | 2022; Represented Mahindra-TERI Centre of Excellence (MT CoE) at the WEC Expo organized by Green Society of India (*Sponsored*)

External Movable Shading Systems (EMSys) | 2022; Represented TERI at the round table meeting on 'Market Development of External Movable Shading Systems' for India organized by Indo-Swiss BEEPIIndia (*Sponsored*)

Hands-on Natural Building Workshop | 2022; Understanding the use of stabilized mud and lime in building construction workshop organized by Gramavidya at Bangalore, India

Green Growth Global Week (GGGI) | 2021; Speaker for the session Closing the Loop: Circularity in the Built-Environment, Seoul, Republic of Korea (virtual Conference)

Other Experience + Certifications

- Co-founder: [M.U.D Collaborative](#)
- Student Member: ASHRAE Pittsburgh Chapter
- Student Member and Organizing Committee Member: IBPSA-USA
- Volunteer: Project Pipeline – NOMA Pittsburgh / 2024
- Registered GRIHA Certified Professional / 2021
- LEED Green Associate Candidate / 2025
- Architectural Intern: Hiren Patel Architects, Ahmedabad, India / 2020
- Summer Intern: SEEDS-India, New Delhi, India / 2017
- Financing and Performance Contracting for Energy Efficiency Projects - Schneider Electric / May'24 ([Link](#))
- Building Life Cycle Analysis (One Click LCA) - GTA Academy / Mar' 22 ([Link](#))
- Natural Ventilation in the Built Environment - TERI / Sep '20
- Sustainable Building Design - MITx / Sep' 20 ([Link](#))
- Gender Equality and Human Rights in Climate Action and Renewable Energy United Nations UN CC:e-Learn / Jun' 22 ([Link](#))
- Autodesk Revit MEP – Udemy / May'21
- Certified Autodesk 3DS Max – Wizcrafter the CAD Institute / May'17