

Riya Malhotra

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

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Education

MS Building Performance & Diagnostics (2023 – 25)

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

Bachelor of Architecture (2015 – 20)

Maulana Azad National Institute of Technology,
Bhopal, India

Skills

AutoCAD, 3ds Max, Adobe Creative Suite, Climate consultant, Climaplus, ClimateStudio, Dialux, Diva, DesignBuilder, Relux, REM/Rate, Rhino3D, Sketch-Up, Velux, Microsoft Office, Xendee, R Studio, IES-VE, GIS/CAFM, Revit, eQuest, Ecotect, Honeybee-Ladybug, Grasshopper, Python (Data Analysis), Lightstanza, One Click LCA

Publications

[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.

[Comparative analysis of daylight levels in an office space considering standard overcast sky condition and measured CIE sky type of Gurugram, India](#) [Conference] / auth. Rohit Thakur, Riya Malhotra, Ankit Bhalla and Sanjay Seth // IBPSA England: BSO in the Global South. - Bath, UK: [s.n.], Dec' 2022.

[Circular Economy and the Built Environment in India: Closed loops as leverages](#) / auth. Riya Malhotra and Tarishi Kaushik // Shashwat Magazine. - New Delhi: GRIHA Council, 2022.-Vol. 8, Dec' 2022.

[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

[A validation study of simulated illuminance levels of office space in Gurgaon, India under actual CIE sky conditions](#) [Conference] / auth. Ankit Bhalla, Riya Malhotra and Rohit Thakur // Advances in System Simulation (SIMUL 2022). - Lisbon, Portugal: [s.n.], Oct' 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.

Professional Experience

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

Worked on the Energy and Solar API integration and research for Smart Surfaces Benefit-Cost Analysis Tool to quantify the direct and indirect energy savings from smart surfaces in cities and their impact on peak demand management.

Teaching Assistant, Carnegie Mellon University, U.S. | Sep-May'25

Assisted Prof. Vivian Loftness with the course Environmental Systems: Climate & Energy in Buildings which introduces architectural design responses for energy conservation and site-specific climate dynamics with REMrate software.

Assisted Joshua Lee with the '48-711 Paradigms of Research in Architecture' course supporting course delivery on research methodologies while mentoring students on developing independent architectural research proposals.

Research Assistant, Centre for Building Performance & Diagnostics, Carnegie Mellon University, U.S. | Sep'23 - Dec'24

Worked on the DOE-funded research focused on advancing residential electrification and solar energy adoption for energy resilience in low-income urban communities, a GSA-funded post-occupancy IEQ Study for Domenici Courthouse Albuquerque, U.S.

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 a Building Performance Standard (BPS) dashboard as part of my primary project during my fellowship at JLL. Additionally, contributed to research on small urban grocery stores, supporting the development of an energy modelling tool for Schneider Electric.

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

Successfully led and managed multiple research and green building consultancy projects for GRIHA, IGBC, and LEED rating systems, overseeing project management, client meetings, building simulations, and comprehensive documentation

Led the 'State of Play of Circular Built Environment' project as the Asia representative from TERI for the United Nations One Planet Network, delivering a comprehensive report on key recommendations and SDG indicators for China, India, Indonesia, Nepal, Pakistan, and Sri Lanka

Led the project proposal 'A detailed study for enabling access to knowledge on advanced building materials & design towards energy efficient buildings' for acquiring \$30,000 funding from the Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, India

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

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

Served as the primary author for the book 'Daylighting: Prescription for Affordable Housing in India' and played a key role as a technical team member in the development of the 'Econiwas Samhitha Design Aider', focused on building envelope studies

Played a key role in the augmentation and promotion of the lab's testing infrastructure, including the testing services GHB, TPS, Emissometer, Sky Scanner, and the Solar Monitoring station

Tool Development

Building Performance Standards (BPS) Dashboard (JLL) | 2024: Developed a wireframe of a BPS dashboard and calculator that serves as a 'One Stop Shop' for existing and prospective clients to advance their regulatory compliance efforts.

CIE Standard Sky type finder (TERI) | 2022: Worked as the technical team member in the development of a database that showcases the prevailing sky distribution model for New Delhi and NCR locations using CIE standard Skies

Eco-Niwas Samhita Design Aider Tool (TERI) | 2021: Worked as a technical team member in the development of an early design tool to ease the implementation of Econiwas Samhita (Residential Building ENS 2018 code)

Building Materials Directory of India (TERI) | 2020: Assisted in developing the base model in DesignBuilder for the parametric analysis and comparison of selected materials

Relevant Awards & Achievements

Adam Rozenberg Community Builder Award | 2024; Environmental Defense Fund, for my work, leadership and contributions to the 2024 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; an annual hands-on educational camp for building design professionals in India focusing on building energy efficiency (Cohort of shortlisted 50 students)

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 as a part of Smart City Mission (Cohort of 10 students)

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 (On-going): Ensuring Energy Security in Low-Income Residential Communities (Retrofitting Taxonomy, Energy data analysis and solar energy Integration)

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 Palmattee'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
- 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