

JAYATI CHHABRA

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Professional Summary

Cross-functional building performance research engineer and product designer with five years of experience in translating complex technical requirements into intuitive tools. Strong background in energy codes, energy audits, retrofit planning, and compliance tools (COMcheck, REScheck), with additional expertise in WBLCA and emerging building technologies.

Education

- Georgia Institute of Technology | Atlanta, GA
Master of Science in Architecture (High Performance Buildings) | GPA: 4.0
Dissertation titled “Building-integrated carbon sequestration techniques.” Aug 2019 – Dec 2020
- Visvesvaraya National Institute of Technology | Nagpur, India
Bachelor of Architecture (5-year degree) | GPA: 8.89
Dissertation titled “Gendering of Spaces.” July 2013 – May 2018

Work Experience

Pacific Northwest National Lab (PNNL) | Atlanta, GA

Building Energy Research Engineer II Jun 2023 – Present

- Led the advancement of Audit Template (a **~\$1M DOE-funded** web-based tool), developing new capabilities such as 179D Alternative Measurement Pathway, Strategic Decarbonization Assessments, Cambium future emission scenarios for retrofit planning and more. Included **conception** of ideas, **design documentation**, developing **wireframes, prototypes** and **interaction workflow**.
- Provided **technical assistance** for widely used compliance tools (**COMcheck and REScheck**) and energy codes. Supported implementation of **Energy Credits** for ASHRAE 90.1-2022 in COMcheck.
- Developed a technical framework to expand **DOE/PNNL commercial prototype building characterization** for use in **Whole Building Life Cycle Assessment (WBLCA)** studies, bridging operational and embodied carbon analyses.
- Developed guidance on **Alternative Compliance Pathways (ACPs)** in **Building Performance Standards (BPS)** to support jurisdictional policy integration.
- Participated in **technical advisory groups** for the development of state level **green codes** and stakeholder engagement for OpenStudio measure for **ASHRAE 90.1 Appendix G Performance Rating Method**.

Cove Tool Inc. | Atlanta, GA

Building Performance Researcher Feb 2021 – Jun 2023

- As the product manager, led the end-to-end design and development of two major software modules - **Building Product Database** and **Assembly Builder** used for **load modeling, energy and embodied carbon analysis**. Spearheaded the research and calculation of three different metrics - thermal performance, cost, and embodied carbon for more than **400+ materials and 1000+ code-minimum building assemblies**.
- Conducted and published multiple studies analyzing early-stage **energy savings** across various climate zones and energy codes, quantifying the impacts of **HVAC, lighting, and building envelope interventions** on energy use intensity, operational carbon emissions, and operational costs to support **net-zero goals**.
- Authored **40+ articles and ebooks** focused on building energy modeling, energy codes, material classification, building assemblies, BIM modeling, optimizing renovation projects, and meeting AIA 2030 targets.
- Delivered **technical demonstrations, trainings, and workshops** to **250+** architectural and engineering firms supporting them integrate building performance analysis in their design workflow.
- Automated **26+ global energy codes** (including national and state specific codes such as Title 24, ASHRAE 90.1, NCC, Japanese code) through close collaboration with mechanical engineers **standardizing compliance checks** for building design.
- Optimized workflows for product development handoffs between the Building science and software teams by creating a standardized process of documenting requirements, regular check-ins and testing features.

- Assisted with **LEED certification credits** for mixed-use (office and retail) projects including Reston Gateway, 301 Hillsborough.

Volunteer Experience

International Building Performance and Simulation Association USA (IBPSA – USA)

Director (serving as Secretary since 2024)

Jan 2022 – Present

- Provide strategic leadership to advance the organization's mission, grow membership, and support chapters.
- Founder and Former Chair, Emerging Professionals and Students of IBPSA-USA (EPSI) Committee:** Launched multiple initiatives such as - Development of ASHRAE BEMP exam training material, Virtual Career Fair for Building Simulation industry, multiple career advancement and Simulation Showcase webinars, increasing engagement of emerging professionals.
- Chair of “Membership and Chapters Committee”:** Currently working to strengthen regional chapters and member participation.
- SimBuild Steering Committee Member (2024 & 2026):** Contributed to planning and execution of flagship building simulation conferences.

Publications

J. Chhabra, P. Pease, Z. Zolfaghari, A. Padwal, “Energy Conservation and Load Reduction Strategies for Arctic Buildings: A Comparative Study”, *ASHRAE and SCANVAC HVAC Cold Climate Conference*, 2023.

P. Pease, **J. Chhabra**, Z. Zolfaghari, A. Padwal, “Passive or Active, Mapping the Highest-Impact HVAC Design Interventions Across the USA”, *ASHRAE Winter Conference*, 2023.

P. Pease, **J. Chhabra**, Z. Zolfaghari, “Planning for net zero by 2050, what HVAC system interventions will today’s code-minimum commercial buildings require?”, *ASHRAE Winter Conference*, 2021.

J. Chhabra and T. Rakha, “A modeling framework for building-integrated biotic carbon sequestration (CS) techniques: Towards mitigating climate change,” *Building Simulation Conference Proceedings*, 2021.

J. Chhabra and T. Rakha, “Building-integrated carbon sequestration techniques: Towards mitigating climate change,” 2020 AIA/ACSA Intersections Research Conference: CARBON, 2020.

J. Chhabra and S. Bahadure, “Gendering of spaces”, *ACE (Scopus indexed)*, 2019.

Awards and Certifications

- Outstanding Performance Award (OPA)** (Pacific Northwest National Lab) - Internal lab recognition for technical contributions to Audit Template and work in BPS project.
- Outstanding Performance Award (OPA)** (Pacific Northwest National Lab) - Internal lab recognition for the advancement of Quick Building Assessment Tool (QBAT).
- Honorable mention** - Dagmar Epstein Environmental Vision Prize (Studio project, Georgia Institute of Technology), 2020
- Top High-performance Buildings Student Award** (Georgia Institute of Technology), 2020
- LEED Green Associate** (USGBC), 2020
- Best Student Paper Award** (Gendering of Spaces, ACE), 2019
- Architect's Licensure** (Council of Architecture, India), 2018

Key Skills

Cross-functional Collaboration, Leadership, Product & Task Management, Early-stage Building Performance Analysis (**Ladybug**, **Honeybee**), Building Energy Modeling (**EnergyPlus**, **OpenStudio**), Whole Building Life Cycle Assessment (**One Click LCA**, **EC3**), Sustainability, Research, Technical Writing, UI/UX Design & Prototyping (**Figma**, **Adobe Suite**), Architectural Drawing (**AutoCad**, **Revit**, **Sketchup**, **Rhino**), Public Speaking, Quality Assurance, Database Management, Stakeholder Engagement.