

Dr. Sanmarga Mitra

Assistant Professor, Department of Architecture, School of Planning and Architecture, Bhopal

Dr. Sanmarga Mitra is an architect, urban planner, educator, and researcher whose academic work explores the intersections of vernacular architecture, environmental performance, sustainable urban development, and contemporary architectural practice. As an Assistant Professor in the Department of Architecture at the School of Planning and Architecture (SPA), Bhopal, he combines teaching, research, and institutional engagement to advance context-sensitive approaches to the built environment.

Dr. Mitra holds a Bachelor of Architecture degree from Jadavpur University, Kolkata, and a Master of City Planning degree from the Indian Institute of Technology (IIT), Kharagpur. His doctoral research, undertaken at the National Institute of Technology (NIT), Patna, examines the thermal performance of indigenous residences in comparison with modern residential buildings in Kolkata, India. This interdisciplinary academic background informs his interest in understanding how architectural form, building materials, construction techniques, and urban conditions influence environmental performance and human comfort.

His research focuses particularly on the environmental appraisal of traditional residential architecture and the potential application of indigenous building knowledge to contemporary design. His publications investigate thermal comfort, urban warming, and the comparative performance of old indigenous houses and modern residential buildings. His work also explores the sustainable performance of India's diverse regional vernacular architectures, drawing attention to the climatic and geographical contexts that have shaped traditional building forms, materials, layouts, and construction systems. Through this research, he seeks to identify design principles that can contribute to more climate-responsive, energy-conscious, and sustainable contemporary buildings.

Dr. Mitra's broader scholarly interests encompass architectural history, contemporary architecture, building materials and construction, architecture and economics, transportation planning, and geographical information systems (GIS) for sustainable urban development. His research on green urban settlements examines the potential of spatial mapping and analytical methodologies to support environmentally responsible urban growth. He has also investigated approaches to evaluating city-level road networks for passenger transportation, demonstrating his interest in the relationship between urban infrastructure, accessibility, and planning decisions.

At SPA Bhopal, Dr. Mitra contributes to architectural education through teaching subjects that include architectural design, contemporary architecture, Western architectural history, vernacular architecture, building services, structural systems, building economics, and construction-related studies. His interdisciplinary teaching approach connects historical and

theoretical perspectives with technical knowledge and practical design considerations. He also engages in collaborative research with students, encouraging their participation in scholarly inquiry and academic dissemination.

Dr. Mitra's research portfolio includes publications on vernacular architecture, thermal comfort, sustainable urban settlements, transportation networks, and innovative approaches to mitigating urban warming. These contributions reflect his commitment to examining the built environment through evidence-based, multidisciplinary perspectives. His work underscores the value of integrating traditional architectural wisdom with contemporary scientific methods and planning strategies.

Through his academic, research, and teaching endeavours, Dr. Sanmarga Mitra advocates an approach to architecture and planning that is environmentally responsive, culturally informed, and attentive to human well-being. His continuing engagement with architectural heritage, building performance, and sustainable urban development contributes to the broader pursuit of resilient and resource-conscious built environments in India.

PhD Topic: Thermal Performances of Indigenous Residences Versus Modern Residential Buildings of Kolkata, India

Patent Awarded

A methodology for simulative forecasting of indoor thermal comfort in residential buildings

Inventors: **Dr. Sanmarga Mitra** and **Prof. Shailendra K. Mandal**.

The method predicts indoor thermal comfort in a residential building using its design details, before construction and without relying on occupant feedback. The stated application relates to climate-responsive architecture and reducing urban heating

Current PhD Scholar

Scholar Name: **Ar. Kalyani Roy**

Topic: **Identifying the parameters that contributed to layout, style of Indo-European architecture and its elements of Kolkata through past ages.**

Aim: This research is aimed at studying the genesis and metamorphosis of indigenous architectural styles of residences of Kolkata from British colonial till post-Independence period, and to enumerate the parameters influencing this evolution of architectural design.

Prominent Journal Publications

1. Mitra, S., & Mandal, S. K. (2025). Review of works on comparison of old indigenous residences with modern houses in India on non-subjective indices of thermal comfort. *Journal of Environmental & Earth Sciences*, 7(3), 329–340. <https://doi.org/10.30564/jees.v7i3.7910>
2. Mitra, S., & Mandal, S. K. (2024). An innovative predictive model for indoor thermal comfort condition of residential buildings to mitigate urban warming: Case study Kolkata, India. *Journal of Environmental & Earth Sciences*, 6(2), 64–86. <https://doi.org/10.30564/jees.v6i2.6612>
3. Mitra, S., & Mandal, S. K. (2024). Comparison of thermal comfort of old indigenous houses with new residential buildings of Kolkata, India. *ISVS e-journal*, 11(2), 364–379. <https://doi.org/10.61275/ISVSej-2024-11-02-23>
4. Mitra, S. (2019). Examining the thermal performance of old indigenous architecture of Kolkata to attain sustainable development. *International Journal of Advanced Research in Engineering and Technology*, 10(2), 403–413. <https://doi.org/10.34218/IJARET.10.2.2019.039>
5. Mitra, S. (2018). A methodology to attain green urban settlements through GIS mapping. *Journal of Civil Engineering and Environmental Technology*, 5(4), 211–214.
6. Mitra, S. (2008). Role of composite EPS panels in earthquake resistive buildings. *Journal of Real Estate, Construction & Management*, 23(1), 27–35. <https://doi.org/10.1177/2977657020080102>
7. Mitra, S. (2007). Influence of industrial revolution on the architecture of Calcutta: Case study of Strand Warehouse. *Journal of Bengal Art*, 11-12, 285-295
8. Mitra, S. (2019). Encouraging indigenous architecture for sustainable urban growth: Case of Kolkata. *European Journal of Sustainable Development Research*. <https://dergipark.org.tr/tr/pub/ejsdr/article/454736>
9. Mitra, S., & Mitra, P. (2015). Continuing traditional skill: Learning from the innovative adaptations of indigenous mud construction in Rabindranath Tagore's residence Shyamali at Santiniketan, West Bengal. *SPANDREL – Journal of School of Planning and Architecture*, 10, 114-125

10. Mitra, S. (n.d.). A methodology for evaluation of a city-level road network for passenger transportation: Case study Kolkata. [Journal details to be verified]. <https://doi.org/10.17577/IJERTV3IS031509>
11. Mitra, S., & Bose, S. (2017). Sustainable performance of diverse regional vernacular architecture of India: Case study of I. G. R. M. S. Bhopal, India. *Procedia Environmental Sciences*, 37, 495–513. <https://doi.org/10.1016/j.proenv.2017.03.023>

Book chapters

1. Mitra, S., & Mitra, P. (2019). Comparative assessment of thermal comfort conditions within regional vernacular houses of I.G.R.M.S., Bhopal. In R. Khare, S. Mitra, P. Singh, & B. Raghuwanshi (Eds.), *South Asian vernacular architecture: Challenges to its continuity and strategies for its future* (pp. 195–206). SPA Press.
2. Mitra, P., Sharma, A., & Mitra, S. (2023). Identifying the urban voids and upliftment of displaced communities at Purana Loha Pul, Delhi. In U. Sharma, R. Parthasarathy, & Aparna (Eds.), *Future is urban: Livability, resilience and resource conservation* (pp. 274–282). Routledge. <https://doi.org/10.4324/9781003342441-31>
3. Mitra, P., & Mitra, S. (2016). Landscape architecture and garden design. In *Ornamental plants and garden design in tropics and subtropics* (pp. 615–695). Astral Publications.

Edited books

- Khare, R., Mitra, S., Singh, P., & Raghuwanshi, B. (Eds.). (2019). *South Asian vernacular architecture: Challenges to its continuity and strategies for its future*. SPA Press.