

From Isolation to Integration: A Biophilic Design Approach for Enhancing Inhabitants' Well-being in Urban Residential Spaces in Dhaka

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Abstract : The concept of biophilic design has emerged as a transformative approach to restore the intrinsic connection between people and nature, an innate bond disrupted by urbanization and industrialization. As urbanization progresses, it is crucial to raise awareness about these issues in order to ensure people can live and work in healthy environments that enhance well-being. Dhaka, the capital of Bangladesh, faces challenges arising from unplanned urban expansion, leading to a notable disconnect between city dwellers and their natural surroundings, a problem prevalent in rapidly developing megacities. Significant interdisciplinary research consistently shows that connecting indoor and outdoor spaces can improve mental and physical well-being by rekindling a connection with the natural world. However, there is a significant lack of study on the implementation of biophilic design principles in the built environment to tackle these problems, despite the well-documented advantages. The Palashi Government Staff Quarter, a 3.8-acre housing area for government staff with around 1,000 residents in Dhaka, has been selected as a case study. The main goal is to create and implement biophilic design solutions to address social, environmental, and health issues while also enhancing the built environment. A methodology applicable to improving biophilic design is developed according to the needs of the residents. This research uses a comprehensive approach, including site inspections and structured and semi-structured interviews with residents to gather qualitative data on their experiences and needs. A total of ten identical six-story buildings have been surveyed, with varying resident responses providing insight into their different perspectives. Based on these findings, the study proposes alternative design strategies that integrate biophilic elements such as daylight, air, plants, and water into buildings through windows, skylights, clerestories, green walls, vegetation, and constructed water bodies. The objective of these strategies is to improve the built environment that restores the existing disconnection between humans and nature. Comparative analyses of the current and proposed scenarios demonstrate substantial upgrades in the built environment, as well as major improvements in the physical and psychological well-being of residents. Although this research focuses on a particular government housing, the findings can be applied to other residential areas in Dhaka and similar urban environments. The study highlights the importance of biophilic design in housing and provides recommendations for policymakers and architects to improve living conditions by integrating nature into urban settings.

Keywords : biophilic design, residential, built environment, human nature connection, urban, Dhaka

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