

## **IMPACT OF DIFFERENT WINDOW TYPES IN REGULATING NATURAL VENTILATION OF RESIDENTIAL BUILDINGS OF DHAKA, BANGLADESH**

**MD. NYMUL HAQUE<sup>1</sup> & JINIA SHARMEEN<sup>2</sup>**

<sup>1</sup>Principal Architect, Khetromiti Upodeshta, Dhaka, Bangladesh

<sup>2</sup>Assistant Professor, Department of Architecture, Ahsanullah University of Science and Technology,  
Dhaka, Bangladesh

### **ABSTRACT**

Natural ventilation is most desirable for cooling and providing fresh air in residential buildings for better indoor air quality and thermal comfort. The natural ventilation performance is affected by a combination of internal and external factors. External factors include the location, the orientation, the prevailing wind speeds and the building forms of the residential development, which are subject to constraints beyond the control of site planners and architects. Whilst for internal factors like the openings configurations and window types, site planners and architects are always given free hand for a proper design. Dhaka, a city in the Tropics, has become such a city where with rapid urbanization users are moving towards mechanically ventilated buildings putting ever increasing demand on the dwindling energy resources. This paper focuses on the influences of window types on the natural ventilation of residential units in Dhaka in order to improve quality of indoor living environment. Primary objective of the study is an attempt to investigate the performance of different types of windows which is commonly used in residential buildings of Dhaka city. It is expected that the findings will immensely help design professionals practicing all climatic contexts where ventilation is an important design consideration.

**KEYWORDS:** Dhaka City and Tropics, Performance Evaluation, Residential Building, Simulation Study, Window Types