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Investigation on window opening and closing behavior in schools through measurements and surveys: A case study in Budapest

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Title

*Investigation on Window Opening and Closing Behavior in Schools Through
Measurements and Surveys: A Case Study In Budapest*

Abstract

In this study, a multidisciplinary approach has been adopted to observe and investigate window opening and closing behavior in two classrooms of a Hungarian school. Surveys and measurements have been used to identify environmental, contextual or habitual drivers of window use. For this purpose, 8-months long time-series datasets and qualitative teacher interviews were the tools used to investigate behavior. The two classrooms have identical boundary conditions; however, drivers for window adjustments were observed to be different. In one case, window use is primarily triggered by habits and time-dependent actions, whereas, in the second one, environmental parameters are the key drivers. In the latter case, stochastic behavioral models have been developed aiming at a future implementation in energy simulations. In the literature, few studies focused on analyzing these phenomena, resorting to interdisciplinary methods to reach a comprehensive understanding of occupants' behavior. Moreover, assessing behavior can lead to an optimization of the indoor environment, which is of primary importance in school buildings both in terms of energy use and pupils' health.

Keywords

Sustainable building; energy efficiency; occupant behavior; window use; behavioral modeling

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