Occupants' window opening behaviour - DTU Orbit (11/08/2019)

Occupants' window opening behaviour: A literature review of factors influencing occupant behaviour and models

Energy consumption in buildings is influenced by several factors related to the building properties and the building controls, some of them highly connected to the behaviour of their occupants. In this paper, a definition of items referring to occupant behaviour related to the building control systems is proposed, based on studies presented in literature and a general process leading to the effects on energy consumptions is identified. Existing studies on the topic of window opening behaviour are highlighted and a theoretical framework to deal with occupants' interactions with building controls, aimed at improving or maintaining the preferred indoor environmental conditions, is elaborated. This approach is used to look into the drivers for the actions taken by the occupants (windows opening and closing) and to investigate the existing models in literature of these actions for both residential and office buildings. The analysis of the literature highlights how a shared approach on identifying the driving forces for occupants' window opening and closing behaviour has not yet been reached. However, the reporting of variables found not to be drivers may reveal contradictions in the obtained results and may be a significant tool to help direct future research.

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