

A roadmap for capturing user-adaptive facade interaction

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Adaptive façades are building envelopes that interact with users and vary their performance or properties (controlling thermal or solar energy, air flow and/or daylight) in response to changing external conditions and indoor needs. However, effective adaptive façade solutions that provide an optimal balance between user comfort, satisfaction and energy efficiency cannot be achieved without a comprehensive knowledge of the user-façade interaction. A systematic literature review was conducted to highlight the implications of occupants environmental control in interactive systems and provide up-to-date research suggestions to address the complexity of user – adaptive façade interaction.

The main objective of this poster is to facilitate discussion on two of the multidisciplinary features of a satisfactory user - adaptive facade interaction: (1) the interface between users and facades and (2) the acknowledgment of the interaction strategy as a “loop”, in which users' feedback enhances automatic control strategies. Lastly, a map of research gaps and future research directions / objectives is presented.

key words: occupants satisfaction, user interaction, interface, adaptive facade, control strategy

