# Article information:

Semi-automated vs manually controlled dynamic facades: assessment through a field study on multi-domain occupant satisfaction - ScienceDirect  
<https://www-sciencedirect-com.ezproxy.cityu.edu.hk/science/article/pii/S0378778823001421?pes=vor>

# Article summary:

1. Automated controls of dynamic building components, such as facades, can improve energy efficiency and occupant satisfaction, but their effectiveness depends on the level of responsiveness of the control system and occupant acceptance.

2. Semi-automated control strategies that include the option for occupants to override automated control decisions, restore daylight and outdoor view access as soon as possible, and prevent discomfort glare can outperform manual controls in achieving higher occupant satisfaction for a given context.

3. An integrated multi-domain approach that simultaneously integrates occupant requirements in all four environmental domains (thermal, visual, air quality, and acoustic) with personal control and interaction is valuable when assessing facade influence on occupant environmental satisfaction and interaction in real office environments.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article discusses the effectiveness of automated controls for dynamic building components, specifically dynamic facades, in improving energy efficiency and reducing emissions from the built environment. The article highlights that occupant satisfaction and acceptance are crucial factors in determining the success of automated controls. The study aims to assess whether a semi-automated control strategy can outperform manual control in achieving higher occupant satisfaction and whether an integrated multi-domain approach is valuable when assessing façade influence on occupant environmental satisfaction and interaction in real office environments.

The article provides a detailed methodology for the study, including information on the case study, experimental design, environmental sensing, and occupant-data interfaces. The study was conducted over a period of two months with 11 volunteers who were asked for consent on both objective and subjective data monitoring. Data on indoor environmental quality, occupant feedback and interactions were collected by bespoke sensing toolkits, polling stations, and questionnaires.

The article presents some potential biases in favor of automated controls. It highlights that automated controls can significantly reduce emissions from the built environment without compromising occupant comfort/satisfaction. However, it does not provide sufficient evidence to support this claim. The article also suggests that semi-automated control is pivotal for occupant acceptance and satisfaction with automated dynamic facades but does not explore counterarguments against this claim.

The article provides some insights into potential risks associated with automated controls such as perceived lack of personal control experienced by occupants when automated controls are implemented. However, it does not present both sides equally as it focuses more on the benefits of automated controls rather than their potential drawbacks.

Overall, the article provides valuable insights into the effectiveness of semi-automated vs manually controlled dynamic facades in achieving higher occupant satisfaction while improving energy efficiency. However, it could benefit from presenting both sides equally and providing more evidence to support its claims.

# Topics for further research:

* Potential drawbacks of automated controls in building systems
* Factors influencing occupant satisfaction with dynamic facades
* Multi-domain approach to assessing building performance and occupant satisfaction
* Comparison of semi-automated vs fully automated control strategies in building systems
* Impact of dynamic facades on indoor environmental quality and occupant health
* Best practices for implementing automated controls in building systems

# Report location:

<https://www.fullpicture.app/item/48dd071bbf59d732ed704338bacd016a>