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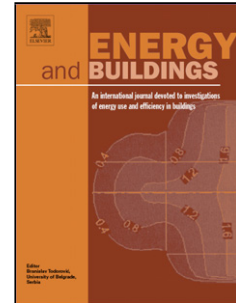
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**VENTILATED FAÇADE WITH DOUBLE CHAMBER AND FLOW CONTROL DEVICE**

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**ABSTRACT**

*Currently, ventilated facades are composed by an inner sheet, thermal insulation, ventilation chamber and exterior finish, a system that allows the heat absorbed by solar radiation to dissipate through natural ventilation of the air from the chamber. This article discusses the feasibility of adding a second air chamber parallel to the existing one, both interconnected by the bottom of the facade, and with a device at the top to regulate the air flow in the chambers, depending on the gradient of the existing temperature between inside and outside the building. The main objective is to evaluate the potential of this proposed system in the improvement of the energy efficiency of the building, using a steady model of Computational Fluid Dynamics (CFD). To this end, a comparative study of energy performance was carried out, as well as the thermal and fluid dynamic behavior, between the proposed two-chamber system and the conventional ventilated facade system with closed joint, at different times of the year. The results show that the proposed system allows an increase of 38% efficiency in summer period, and 333% in winter period, compared to a conventional ventilated facade with closed joint.*

**Keywords:** ventilated façade; passive design; CFD simulation; energy efficiency

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