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Jensen, Rasmus Lund; Kalyanova, Olena; Heiselberg, Per

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# Modeling a Double Skin Façade with a Building Thermal Simulation program

Rasmus Lund Jensen<sup>1</sup>, Olena Kalyanova, Per Heiselberg

Department of Civil Engineering  
Aalborg University  
Sohngaardsholmsvej 57  
DK-9000 Aalborg, Denmark  
Tel: +45 96 35 85 51  
E-mail: [rlj@civil.aau.dk](mailto:rlj@civil.aau.dk)

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## ABSTRACT

The use of Double Skin Façade (DSF) has increased during the last decade. There are many reasons for this including e.g. aesthetics, sound insulation, improved indoor environment and energy savings. However the influence on the indoor environment and energy savings are very difficult to predict. This is mainly due to the very transient and complex air flow in the DSF.

In this paper the modelling of the DSF using a thermal simulation program is discussed. The simulations are based on the measurements reported in (Kalyanova et al. 2008). In this work detailed measurements on a DSF was reported. This includes measurements of both boundary conditions like weather data and results like energy for cooling and solar radiation through the DSF.

The thermal simulation program does not at the moment include a special model to simulate the DSF. However as the results shows it was possible to predict the energy flow temperature distribution and airflow in the DSF. The good agreement between the measured and simulated results was unfortunately very sensitive to the model. This implies that without the possibility to calibrate the simulation model with measured data the risk of generating poor results is imminent. Therefore further work including both measurements and more detailed and robust simulation programs are necessary.

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<sup>1</sup> Corresponding author