AN APPROACH FOR VENTILATED DOUBLE SKIN FACADE THROUGH APARAMETRIC MOVEMENT INTERVENTION

By

Shaimaa Mohamed Reda Fayed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY
in
ARCHITECTURAL ENGINEERING

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Under the Supervision of

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Title of Thesis:
An approach for ventilated Double Skin facade through a Parametric Movement Intervention

Key Words:
Natural ventilation; Building envelope; Double skin facade; Air flow in buildings;CFD simulation

Summary:
The goal of this research is to improve the functionality of DSF as a passive strategy approach, to enhance air flow in building, which is considered one of the prime parameters that assist in increasing range of the thermal comfort. Accordingly, the research will introduce the movement of the parametric pattern for building second skin to generate inspired criteria for exploiting air flow in space reflected at the skin morphology. The research will focus on the design of envelope, emphasizing the importance of the early integration of active skins through parametric pattern approach. The investigation doesn't aim to arise technology and design tools for double skin facades; rather than proposing another variables defining double facade design through parametric pattern inspiration. The research emphasizes on boosting air flow in the building to attain the required thermal comfort through natural ventilation approach.

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