THERMAL PERFORMANCE OF NANOMATERIALS OF A MEDIUM SIZE OFFICE BUILDING ENVELOPE

WITH A SPECIAL REFERENCE TO HOT ARID CLIMATIC ZONE OF EGYPT

By

Nouran Ashraf Ali

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under the Supervision of

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Title of Thesis:

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Key Words:
Office Buildings-Building envelope- Energy consumption-Nano technology-Nano insulation materials.

Summary:

According to the increase in energy consumption in Egypt, the building materials play a huge role to increase the energy efficiency of the building and reduce energy consumption. The use of nanotechnology in architecture gives us a huge step towards a better built environment, the integration of nanomaterials with building envelope can improve building thermal performance in hot arid climates of Egypt. This research represents a comparison between the energy consumption and thermal performance of Nano and traditional materials, finally the research represents the recommendations and results to understand the possibility of using nanotechnology in buildings.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.
I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Nouran Ashraf Ali Date:

Dedication

TO MY FAMILY

MY FATHER, MY MOTHER, MY SISTER & MY BROTHER.

Acknowledgments

First, I would like to primarily thank God for my conciliation in this research and I hope that this research is useful.

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Table of Contents

List of Tables

List of Figures